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Environmental Audit Committee

The EU Emissions Trading Scheme: Lessons for the Future

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The Environmental Audit Committee

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

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Introduction

The EU ETS is the cornerstone of UK and EU climate change policy

1. The Government has made it clear that the EU Emissions Trading Scheme (ETS) is "the cornerstone of the Government's policy framework to tackle climate change." Given that the Prime Minister has repeatedly emphasised that, as he puts it, "climate change is probably the greatest long-term challenge facing the human race," and that tackling it is thus "a top priority for this government, at home and internationally," it would seem no exaggeration to say that the Government has more staked on the success of this one policy instrument than perhaps any other. (Paragraph 1)

2. Within a matter of months the European Commission is set to have reached decisions on the next two phases of the EU ETS which will be vitally important, not just to the success of this Scheme, but to the establishment of carbon trading worldwide. The EU ETS has received serious criticism for its design to date, concerning the efficiency and effectiveness with which it sets carbon allocations, and the way in which it relates to countries outside the EU, both in terms of dealing with international competition and of funding offsetting projects in developing economies. These challenges must be addressed if the EU ETS is to prove the credibility of emissions trading as the foremost mechanism for tackling greenhouse gas emissions worldwide. In meeting these challenges, and making a success of emissions trading, Europe would be in the position to mould a global carbon market, something which only underlines the importance of getting the design of the Scheme right. The converse risk, if Member States and the European Commission get the terms of Phases II and III wrong, is that the credibility and potential effectiveness of emissions trading is fatally and permanently undermined. (Paragraph 10)

An assessment of the Scheme's impacts to 2012

The record of Phase I

3. Two years into the operation of the EU ETS, there is much to applaud. The very existence of such a complex system, involving hundreds of firms and thousands of installations in 25 countries, is an impressive achievement in its own right, especially considering the tight timetable under which it was set up. In operation, the Scheme has shown itself so far to be an administrative success, with the overwhelming majority of installations reporting their independently verified CO_2 emissions, and surrendering the appropriate number of allowances to cover them, to the required deadlines. (Paragraph 15)

4. While the Scheme so far has been an administrative success, its record in reducing carbon emissions is far less impressive. It appears to us that Phase I will have very little impact on carbon emissions across the EU. Allocations of allowances to emit carbon were too generous, and the market price of them consequently too low, to

drive a transformation in business strategies and technical processes. Overall, the emissions projections appear to have been inaccurate and inflated, and the national caps derived from them too unambitious. There is some excuse for this in Phase I, given the difficulties in collecting accurate baseline data and the compromises needed to achieve speedy implementation of the initial phase of the Scheme; and for these reasons it has always been characterised as a "learning by doing" phase. But lessons must actually be learnt, and things radically improved, in Phase II and beyond. (Paragraph 26)

5. While this view is contradicted by the study by academics from the Massachusetts Institute of Technology and Fondazione Eni Enrico Mattei, we have some doubts as to the strength of its conclusions. In view of the reliance which the Minister is now placing on this one piece of research to argue that Phase I has significantly reduced emissions in the EU, the Government should commission an independent review of the study's findings. Overall, we would welcome more research into the effects of the Scheme on participating companies. Where there is strong evidence that the EU ETS is driving behavioural change that cuts emissions in absolute terms, this ought to be given significant publicity, both to spread the lessons of good practice and to bolster domestic and international support for emissions trading. (Paragraph 27)

6. Overall, the extent to which the EU ETS, and any other trading schemes, is judged a success should depend on two main things: the extent to which emissions are reduced, and the extent to which a stable and effective carbon price is generated. To date, the EU ETS has had very questionable effects on both measures. In particular, it has been undermined by weak caps and inaccurate and unsatisfactory methods of allocating allowances to individual sectors and installations. Both shortcomings have been exacerbated, if not wholly caused, by the instrumental role of a multiplicity of national bureaucracies, which have set caps and allocations through a methodology which was not just cumbersome, but prone to being influenced by industrial lobbying. (Paragraph 29)

The prospects for Phase II

7. The Government ought to be commended for its leading contribution to the robustness of Phase II, and future strength of the EU ETS, in proposing a more stringent NAP than many other Member States; as well as submitting it to the Commission on time, unlike many others. That the United Kingdom had the only national cap (in the initial batch of 10 to be reviewed) that was accepted by the Commission as submitted, and without being revised downwards, clearly highlights the fact that in terms of setting limits to emissions the Government is leading the way in Europe. (Paragraph 31)

8. That most of the draft National Allocation Plans originally proposed by Member States for Phase II were so inadequate suggests a worrying lack of public and political understanding of the dangers of climate change, and of the need to tackle it, across the EU as a whole. This highlights the vital role which must be played by the Commission, given its ability to operate at one remove from the competitive national interests of individual Member States, to impose the cutbacks in allocations required by the Scheme as a whole. A corollary of this is that the UK Government must do its

utmost both to persuade other EU states of the need for greater action, and to bolster the position of the Commission in guiding Member States in the right direction. (Paragraph 33)

9. The European Commission's decisions on the National Allocation Plans for Phase II are encouraging not just in terms of making it more likely that the EU ETS will begin to drive real carbon abatement in its Second Phase, but in terms of increasing confidence in the entire viability and future development of the Scheme. (Paragraph 35)

10. While the Commission's decisions on the Phase II NAPs are encouraging, it is important to keep the potential impacts of Phase II in perspective. Its effectiveness in driving carbon reductions depends on several variables, not all of which can be known with certainty at this stage. And while it looks likely that it will put the EU roughly on course to meet its Kyoto commitments, this cannot yet be known for sure. Furthermore, in order to meet UK and EU climate change targets beyond 2012, much greater action both within the EU ETS and in the form of complementary policies will be needed, and soon. (Paragraph 39)

11. One decision on the shape of Phase II, which will have a profound effect on its efficiency and effectiveness, and with which we are signally disappointed, was taken long in advance: the maximum limit of allowances which can be auctioned. Under the ETS Directive, a maximum of only 10% of allowances can be reserved for auction in Phase II, rather than being allocated to firms for free. We believe it was wrong of Member States and the Commission to impose such a restrictive limit on auctioning in Phase II. In our view, auctioning allowances should lead to more accurate allocations, reduced public costs and bureaucracy, and greater internalisation of environmental costs in business decisions. In sectors where there are not strong concerns as to the effects on competitiveness of requiring firms to purchase their allocations upfront, we strongly support 100% auctioning. In auctioning 7% of its Phase II NAP, the Government is doing far more than any other Member State in this Phase, but this level is still far less than the participants could withstand and which would be good for the Scheme as a whole. (Paragraph 40)

Impacts on firms in the UK

12. The Government has been right to impose cutbacks on the power sector's allocations, and to put a proportion of its Phase II allocation up for auction. The power sector has no grounds for complaint about this, given both that it is effectively earning windfall profits from those allocations it is receiving for free, and that it is broadly holding onto its profits rather than investing them in low carbon energy generation. Revenue raised by auctioning these allowances must not be subsumed into general spending commitments, but should be used demonstrably to assist measures to address climate change. The Government should also examine the benefits of recycling a proportion of this revenue in the form of reductions in other taxes. In the interim before Phase III (which we hope will set a higher limit on auctioning), the Government should examine the case for some form of windfall tax on power companies, where they are continuing to earn windfall profits and not investing them in low carbon generation. (Paragraph 48)

13. The Government is also right to reject calls by the Clean Coal Task Group to promise new coal-fired power stations more favourable allocations, since this would be to go against the central point of the EU ETS, which is to put a price on carbon. Moreover, it should maintain subsidies for renewables alongside the pricing mechanism of the EU ETS. At the same time, given the power sector's own admission that policy uncertainty is impeding the flow of investment, the Government must provide clearer and perhaps more prescriptive guidance as to the kind of energy investments that the UK will need if it is to meet both its UK Climate Change Programme and energy strategy objectives. This must certainly be incorporated into the forthcoming Energy White Paper. (Paragraph 49)

14. The impact of the Scheme so far on UK industrial firms is largely indirect, in the form of higher energy costs. Most of the recent rises in energy prices have come from other factors; and to the extent that the EU ETS is responsible, Defra's case that this is to be welcomed, as it ensures energy users pay more of their carbon costs. We recognise that for some firms this represents a genuine challenge. Overall, however, industrial sectors should themselves acknowledge the need to pay external costs. Even more importantly, they must accept that they will soon have to be given some cutbacks in ETS allocations, and make some real reductions in their emissions, in order to play their important role in the UK and EU Climate Change Programmes. In any case, even if they were to avoid future cutbacks, the cutbacks given to the power sector would then have to be proportionately bigger if we were still to achieve our emissions targets, which would in turn result in higher energy prices; thus they would still not be able to escape from the rising costs of carbon. (Paragraph 54)

15. This does not necessarily mean that the concerns expressed by industrial groups are not genuine. The Government should analyse and consult on the extent to which the economy needs greater support and guidance in terms potentially of R&D investment, skills training, and trade agreements in order both to realise the necessary carbon savings in the timescale required, and to do so without incurring the "carbon leakage" of firms relocating to countries with lesser carbon constraints. (Paragraph 55)

16. Above all, however, where there are genuine concerns as to "carbon leakage", the emphasis of both Government and industrial lobbies should be firmly on developing trade agreement or protection measures, rather than seeking to water down the carbon caps on the UK and EU. (Paragraph 56)

The EU ETS and the UK Climate Change Programme

17. Without the expected contribution of Phase II of the EU ETS, UK carbon emissions in 2010 are projected to be only just over halfway to the 20% target, a very significant shortfall. Treating Phase II as though it will deliver actual savings of 8MtC in full, and then treating this as though all 8 million tonnes of carbon reductions are going to take place within the UK, therefore makes a very significant difference to the credibility of this target. (Paragraph 60)

Setting cutbacks from Business As Usual projections

18. Calculating cutbacks in emissions caps with reference to Business As Usual projections lacks certainty and effectiveness. As the Government has implemented it, it means making a specific cutback from a moving target; and if BAU projections are revised upwards, so the cap and the number of allowances to emit carbon moves up with it. In other words, if emissions are projected to be worse than expected, then rather than the cap becoming tighter to redress this extra upward pressure on emissions, in effect it is made looser to make it easier for participating firms to accommodate it. Both within the UK and across the EU ETS, allocations ought to be set with reference to a declining budget of absolute carbon emissions. (Paragraph 66)

19. In addition to this lack of certainty, the practice of setting cutbacks from the moving target of BAU projections creates an obvious lack of transparency. When Defra announced last June that the UK's national cap for Phase II "is expected to deliver additional savings of 8 million tonnes of carbon each year, roughly equivalent to the emissions of 4 ½ million households", the likelihood is that most people including MPs, civil servants, and journalists would have assumed that this meant it would reduce the UK's actual carbon emissions by 8 million tonnes a year. They would surely not have imagined that this same 8MtC was in practice worth less, in terms of real reductions in emissions, than only three months before! This underlines the need to set reductions from an absolute level of emissions, rather than a baseline of BAU projections which may vary significantly according to the differing assumptions that are fed into them. (Paragraph 68)

Phase II will not reduce UK CO_2 emissions by the amount stated

20. Because this is an emissions *trading* scheme, it is impossible to be sure that reducing the allocation of allowances given to UK installations will translate into emissions reductions within the UK. If all those UK installations which exceed their allocations in Phase II buy surplus ETS allowances on the market in order to make up their shortfall in allowances, it is theoretically possible the EU ETS might not be responsible for any emissions reductions within the UK at all. (Paragraph 69)

21. A natural concern which arises from this relates to the transparency of Government reporting of progress against its 2010 target. By automatically ascribing all the savings projected to be generated by the UK's Phase II NAP as though they were being made within the UK, it is quite possible the Government might help to give a falsely reassuring picture of progress against its domestic CO_2 target within the UK. (Paragraph 70)

22. Yet another concern here is that it is not just that the Government is prepared to count CO_2 reductions that take place in other countries against its domestic target for CO_2 reductions in the UK, but that it is prepared to count reductions of other greenhouse gases, the global warming potential of which can be converted by mathematical formula into CO_2-equivalent, against its target for reducing emissions of carbon dioxide. Our concern here is not just regarding transparency, but that many of the projects to reduce exotic gases may be more dubious in terms of their

transparency and impact on Business As Usual investment decisions and industrial processes. (Paragraph 71)

23. The Minister was keen to point out that the Government was limiting the use of CDM and JI credits within the UK NAP. Indeed, their use will be limited, to 8% of the UK's total cap. However, this is still a significant amount, representing some 5.3MtC; and this figure has been worked out by the Government specifically because it corresponds to two-thirds of what it describes as "the effort in Phase II", or in other words the cutback of 8MtC from BAU projections. To be clear, then, the Government is allowing for, and expecting, two-thirds of the headline carbon savings it has announced as resulting from Phase II to take place, not just outside the UK, but outside the EU and probably in the form, not of carbon dioxide, but of carbon-equivalent greenhouse gases. (Paragraph 73)

24. It is essential, for transparency's sake, that in all its communications the Government from now on differentiates between reductions in emissions taking place *within the UK*, and reductions in emissions *funded by the UK*. Moreover, where it is referring specifically to reductions in carbon dioxide, it must differentiate between reductions in CO_2 and reductions in CO_2-equivalent. Where it refers to progress towards UK carbon reduction targets, it ought to give two separate figures: one referring to reductions solely of carbon dioxide and solely within the UK, and one including also the estimated reductions of GHG emissions financed abroad. Above all, it must ensure that whenever it publishes graphs depicting historic UK emissions and plotting their projected progress in future years, this always shows historic and projected emissions from the UK only, and never incorporates, in the same line, estimated reductions funded abroad. (Paragraph 74)

25. Another reason to treat the Government's statements as to the carbon savings to come from Phase II with caution is its record on reporting the savings to come from Phase I. Despite the lack of evidence that Phase I is driving any actual reductions in carbon emissions, the Government continues to make high profile statements that it is reducing emissions in the UK by some 4.6MtC a year. Given his personal and explicit endorsement of this figure before the Committee, the Minister must urgently tell us why, if this is the case, these "savings" of 4.6MtC do not feature anywhere in Government calculations of contributions to the 20% reduction target by 2010. If it is indeed the case that these "savings" are entirely notional—in other words, that they simply reflect a cutback from Business As Usual projections, and have not actually made any impact on UK emissions in reality—the Minister must explain why he failed to make this clear in his evidence to us; and the Government should immediately stop using this figure, and issue corrections to all official uses of it. (Paragraph 79)

Implications for the UK's CO_2 targets

26. Given how instrumental the Government's projections of savings from the EU ETS are to its target for reducing CO_2 emissions by 2010, and given the profound lack of certainty surrounding these projections, the Government's record in meeting or even getting close to its 2010 target must surely be in severe doubt. The Government must provide an updated assessment of progress towards the 2010 target at the earliest

opportunity, and look to revise its climate change policies in this light. This experience also highlights the need for the forthcoming Climate Change Bill to set out statutory arrangements for the Government to report to Parliament at least annually on national progress in reducing UK CO_2 emissions. (Paragraph 81)

27. Furthermore, considering the political capital that the Government has made out of its 2010 target, and the fact that it has featured as a repeated manifesto commitment, the Government has a democratic duty to be more transparent in its reporting of progress against this and future targets. As it stands, presentation of the UK's progress towards its carbon reduction targets is apt to mislead. (Paragraph 82)

28. While it is undoubtedly true that the carbon-intensity of economic growth in the UK has declined markedly in recent years, this is not on its own a guarantee of the success of the Government's Climate Change Programme, nor should it be a cause for complacency. It does not matter to atmospheric concentrations of carbon dioxide whether there has been a reduction in the carbon-intensity of economic production, but only whether absolute levels of carbon emissions are continuing to grow. The fact is that carbon emissions in the UK are higher now than they were in 1997, and while they are projected to be reduced by 2010, this reduction is set to fall some way short of the UK target. The Government must acknowledge that the UK Climate Change Programme is in some important respects failing to cut emissions in the UK as originally planned, implement the lessons as soon as possible, and share them widely with other governments. (Paragraph 84)

29. The difficulties experienced in meeting the 2010 target, and the complications caused by allowing equivalent reductions in other greenhouse gases in other parts of the world to count against a domestic target for reducing CO_2, raise further concerns about the Government's target for reducing UK CO_2 by 60% by 2050. It is vital that the Government does not rely on buying emissions reductions abroad to make up anything more than an insignificant amount of its 2050 target. In putting this target into statute as part of the Climate Change Bill, the Government must specify the minimum proportion of reductions that are to come in the form of CO_2 and take place within the UK. (Paragraph 85)

Recommendations for Phase III and the European Commission Review

Increasing the effectiveness of emissions caps

30. In the interests of making the EU ETS more effective post-2012, the Government should argue for the introduction of a single EU-wide cap to replace the current system of National Allocation Plans. To complement this, it is vital that the EU adopts a series of future carbon-reduction targets. Future ETS caps should be reduced in line with these targets, according to a robust and transparent formula which should be specified in an amended ETS Directive. The Government should also evaluate a range of proposed mechanisms for effectively modifying caps and allowance prices within phases, in order to ensure that the Scheme is able to respond promptly to new circumstances, and to give further certainty as to the long term level and trend of carbon prices. (Paragraph 93)

31. The Government should be commended for pressing the case for such EU-wide emissions targets for 2020 and 2050. However, given that it has described these as targets for "greenhouse gases" as a whole, and has explicitly referred to the use of Clean Development Mechanism credits as a means of meeting them, we are unsure as to the stringency and effectiveness of these proposals. In particular, we note that the proposed target for 2050 would appear much weaker than the Government's own target for the UK, which refers solely to carbon dioxide. The Government should rephrase these proposals, specifying the minimum amounts by which carbon dioxide should be reduced from within the EU itself. (Paragraph 94)

Improving the allocation of allowances

32. The Government should be commended for auctioning a higher percentage of allowances in Phase II than any other Member State. Moreover, it is right to press for full auctioning of allowances throughout the Scheme in the future. In Phase III it should auction 100% of the power sector's allocation, as such firms should be able to pass these costs through without fear of international competition; indeed, this will stop them from making windfall profits. For exactly the same reasons, it should also press hard for the aviation sector to be subject to a 100% auction across the EU from the time it enters the Scheme. For all other sectors, the Government should introduce at least a significant proportion of auctioning, with a commitment to increasing this proportion in successive phases; and with the remainder of their allocations being made on the basis of best available benchmarks. (Paragraph 98)

33. The Government should carry out and publish detailed reviews of the best uses of auction revenue, based around the principle of speeding the development and take-up of new low carbon technologies, but also around the benefits gained by recycling revenues to businesses and individuals in the form of reductions in other taxes– especially where this is with the explicit design of shifting consumption patterns to a more sustainable basis, for instance by reducing VAT and VED on low carbon cars. More specifically, with only a year to its scheduled commencement, the Government should urgently clarify the funding and objectives of the new Environmental Transformation Fund. Among other matters, this should feature detailed evaluations both of where its funding will be most effective, and of what the impacts of incurring these costs will be to contributing firms (including to their potential investment in new low carbon technology) and how this might best be mitigated. (Paragraph 99)

Streamlining and harmonising the running of the Scheme

34. It is imperative that the Government presses not only for a single EU-wide cap, but for harmonisation of the way in which this is broken down into national and sectoral allocations. Chief amongst these priorities should be harmonisation of: i) the proportions of allocations to be auctioned; and ii) to be made up by CDM and JI credits. The Government should also engage stakeholders, within the UK and abroad, as to the potential benefits and practicalities of introducing EU-wide sectoral caps, which might automatically harmonise such aspects across the Scheme. (Paragraph 101)

35. We welcome the Government's leadership on lessening the burdens faced by smaller emitters, not least because the Government is consulting on introducing the Energy Performance Commitment (EPC), a separate regime into which they will presumably be transferred; this suggests to us that they will not fully escape an emissions reduction regime, but that its administrative demands will be made proportionate to their capacity and impact on emissions. In addition, we sympathise with the concerns expressed as to the possible complications and administrative burdens experienced by firms which may find themselves subject to both the EU ETS and EPC, as well as the Climate Change Levy regime. Calls for such firms to be exempted from all but one regime, however, must be treated with a great deal of caution, considering the potential impact on both the finances and emissions not just of those firms in question, but of their competitors. We will investigate these issues in detail in a future consideration of the Climate Change Levy, and may also look in further detail at some point at the EPC. (Paragraph 104)

Protecting firms subject to the EU ETS from International Competition

36. The Government should consult widely in the UK and abroad as to the benefits and practicality of the Carbon Trust's three proposals for protecting vulnerable industries against international competition from firms not subject to the EU ETS or equivalent carbon constraints. In view of the potential difficulties of two of these options, it appears that the use of a border tax adjustment might have the most potential; however, the Government must urgently clarify whether this would indeed pass WTO criteria. (Paragraph 107)

Expanding the Scheme and linking it with others

37. While we would broadly welcome the Government's efforts to expand the EU ETS towards forming a global carbon market, we do so with some caution given the potential to weaken the Scheme by changing its terms. Our first concern is with the use within the Scheme of CDM and JI credits. Limits on the use of such credits should not just be harmonised across the EU ETS, but the Government should also press for a qualitative limit to be imposed on the use of these credits, to ensure that they are funding genuinely additional emissions reductions, and that they make a contribution towards sustainable development. (Paragraph 109)

38. We are not sure about the Government's argument that expanding the EU ETS will necessarily "bring about emissions reductions at lower cost". The Government should clarify its own understanding of the range of carbon prices required to stimulate the necessary level of investments in carbon abatement within the EU ETS, and seek to form a consensus on this across the EU. Considerations of the terms on which other sectors, gases, and trading schemes could be linked or encompassed by the EU ETS could then be made with reference to the projected impacts on this model price. (Paragraph 111)

39. While we support the principle of including aviation in the EU ETS, this will only be effective if the terms of its inclusion are such to constrain and ultimately reverse the rise in aviation emissions. However, we have severe doubts as to its effectiveness under current proposals. Notably, the impact on airfares, and hence demand for

flying, is projected to be relatively minor. Meanwhile, a proportion of what increase in prices there will be is expected to lead to windfall profits for airlines, given that their initial allocation of allowances will be given to them almost entirely for free, and as they, like power companies, will be able to pass on the market value of their allowances to customers. Moreover, there are still no concrete proposals for reflecting the total contributions of aviation to global warming, considered in most estimates to be between two and four times that from CO_2 alone. (Paragraph 115)

40. It is essential, therefore, that the terms of aviation's inclusion are considerably strengthened in Phase III. Notably, lessons should be learned from the way in which the power sector has earned windfall profits in Phase I; as airlines similarly should be able to pass these costs through without fear of international competition, so their allocations should be 100% auctioned. Not only will this lead to a more efficient allocation process and prevent them making windfall profits from the Scheme, it should also focus their attention more on the costs of carbon, and raise valuable revenue. The proportion of auction revenue corresponding to flights within the EU could be earmarked for spending on rail alternatives to short haul flying within Europe. As for the remaining revenues, relating to long haul journeys, the Government and the Commission should make comparative studies of the benefits of the different ways in which these can be used, including using them to fund reductions in other taxes. Equally, the Commission must not waver in pressing for all arrivals and departures, not just intra-EU flights, to be included in the Scheme. The Government must maintain its voluble campaign in support of this principle. (Paragraph 116)

41. Even if the terms on which aviation is included under the Scheme are toughened in Phase III, we still have severe doubts that the Scheme itself will be responsible for any significant improvements in the carbon efficiency of the overall fleets of aircraft affected, given the costs and technological difficulties in doing so. Rather, the chief potential contributions of the EU ETS regarding aviation would appear to lie more in simply increasing the costs of emitting carbon within the Scheme. But this depends on there being a strong cap on aviation emissions. If the cap is too weak, then its impacts—on airfares and demand for flights, and on the wider price of allowances—may be equally undermined. (Paragraph 117)

42. Under current proposals, the allocation given to the aviation sector will be capped at its average level of emissions in 2004-06. In discussions regarding the level of the cap set for aviation emissions in Phase III, it would not be a surprise if airlines argued strongly that the initial allocation should be updated, and set at a baseline taken from years closer to 2012. It is vital for the integrity of the cap on aviation, and with it the integrity of the Scheme as a whole, that the Commission resists such calls. Furthermore, the Commission should put in place a clear commitment to reducing— even if gradually—the allocation set aside for aviation from its initial level. It would risk fatally undermining the effectiveness of the EU ETS—both directly, and indirectly through provoking opposition from other sectors—if the overall cap set by the Scheme was reduced in each phase, but the sectoral cap given to aviation was allowed to rise or even simply stay the same. (Paragraph 118)

43. However the terms of aviation's inclusion in the Scheme are reformed and strengthened, complementary measures will be needed and must be introduced or intensified, aimed at constraining the growth in air travel and reflecting its full external costs, including all its non-CO2 contributions to global warming. In addition to the "upstream" focus of the EU ETS—that is, directly affecting the airlines—the Government, and other Member States, should continue and increase their focus on "downstream" measures, designed to affect private and business decisions as whether or not to fly. Moreover, the Government must work to progress the development of an EU-wide measure to tackle NOx emissions, and should also lead the way in developing measures that reflect the remaining non-CO_2 effects. (Paragraph 119)

44. Finally, now the Commission has published its proposal on aviation, there is no excuse not to include the greenhouse gas emissions of EU flights within the proposed targets for EU emissions reductions to 2020 and 2050. The Government must clarify that its proposed EU targets include aviation emissions, and should also revisit its UK target for 2050 to include the emissions of all flights arriving at and departing UK airports. (Paragraph 120)

45. As yet we have not been convinced by the case for the inclusion of surface transport within future phases of the Scheme. The emissions from this sector can more effectively be tackled through other measures, such as motoring taxes, road charging, and mandatory fuel efficiency agreements with car manufacturers. Moreover, in view of the practical difficulties involved, we believe that it is not just less preferable that surface transport is covered by the EU ETS but conceivably quite unlikely that it ever would be. There is a danger, then, in the Government's mooting it as a possibility, that it may function as a red herring, and confuse or retard debate on other means of reducing emissions from road transport. At the very least, the Government must finally publish some details of its proposal, and show how it might deal with these reservations. (Paragraph 122)

46. The maritime sector is responsible for 4% of the EU's CO_2 emissions. Despite this, there is little discussion regarding the inclusion of European shipping, in stark contrast to other transport sectors. We now urge the Government to explore with European partners the potential of including the maritime sector within a future phase of the EU ETS. As a first step, the Government should press the European Commission to commission a detailed study to quantify the emissions and assess the practicalities involved. (Paragraph 123)

Increasing the transparency and accountability of the Scheme

47. To aid public understanding of the workings and progress of the Scheme, accountability of individual firms, and parliamentary scrutiny of the roles of national governments and European institutions, there ought to be published a high-profile annual report of the EU ETS. This report should set out the allocations and actual verified emissions in that year, broken down both by Member States and by individual installations. In addition, and in much the same way as a departmental or commercial annual report, it should feature a commentary on important aspects of the Scheme's operation in that year. (Paragraph 126)

Putting the EU ETS into perspective

48. The EU ETS is already a hugely significant development in the global effort to tackle climate change. Although its record so far in actually driving carbon reductions is unproven, it is far and away the largest and most sophisticated mechanism potentially capable of capping international emissions; and, as the Commission's decisions on the Phase II NAPs show, it is moving slowly in the right direction. As such it is providing the inspiration and template for the construction of emissions trading schemes in other countries, and, as the Stern Review notes, has the potential to become the nucleus of a single global carbon market. In this respect, it must aim to become the "gold standard" for all other emissions trading schemes to emulate and be brought through market forces to comply with. (Paragraph 127)

49. From pioneering the early UK Emissions Trading Scheme, to setting tougher National Allocation Plans than other Member States in the EU ETS, to leading the debate on expansion of the Scheme to take in other sectors and countries, the Government has consistently showed international leadership in helping to establish the Scheme and see it fulfil its potential. In its commissioning of the Stern Review, we also hope that it has played an ultimately significant role in persuading other countries, notably the United States, Canada, and Australia, to link to or join the Scheme as soon as practically possible. (Paragraph 128)

50. At the same time, the contribution to be made by the EU ETS on its own ought to be kept in perspective. A strong theme to emerge from our inquiry was of the need to supplement the market mechanism of the EU ETS with other measures in order to ensure it delivers desired outcomes. Appeals for such extra measures came from a wide variety of groups: investors, economists, power companies, industrial lobbies, trade unions, and environmental NGOs. What united these appeals was the concern for certainty and security—over the long term price of carbon, over the fit between the EU ETS and energy policy, over protection from international competition not subject to similar carbon constraints, and over the R&D required to deliver step changes in low carbon technology. Uncertainty over all these issues is clearly impeding investment and the transition to a low carbon economy. The Government must look again at what it can do on its own, and what it can do to influence action at the EU level, to provide the certainty, assistance, and protection required to complement the bare workings of the Scheme itself. (Paragraph 129)

51. Overall, there are perhaps two main and related weaknesses in the Government's statements on emissions trading which it needs to recognise and resolve. The first is the contradiction between the Government's reliance on the EU ETS all by itself to set a price on carbon high enough to incentivise investment in low carbon infrastructure, and its enthusiasm for expanding the Scheme in order to lower the price (and resulting cost impacts on business and consumers), and thus make it more politically and economically acceptable. (Paragraph 130)

52. The second concerns the Government's ambition for relatively tough carbon reduction targets for the UK and EU, which themselves depend on global targets in which the whole of the developed world makes steep cuts, while the whole of the developing world has to meet challenging caps on its growth. The contradiction here

lies in the Government's endorsement of and reliance on making up shortfalls in such national targets by buying carbon credits from other countries: if everyone thinks like this, then nobody will reduce any emissions, and nor will there be any surplus credits to buy. Exactly the same applies between different economic sectors. The Government must face up to the fact—and start challenging the British population, other governments, and global businesses to do likewise—that ultimately neither the UK, nor any country, nor any industry, can simply buy its way out of meeting its carbon commitments. (Paragraph 131)

53. Above all, the Government must ensure that it is not investing a magical belief in emissions trading as a miracle cure for global warming – something which will, all by itself, necessarily reduce carbon emissions, necessarily lead to a step change in technology, and necessarily achieve this at low cost and without harming productivity. The most important role for emissions trading is to add a cost to carbon. This can help to incentivise low carbon technological development and market transformation, but in doing so it is likely to raise costs and impinge on economic activities in some areas, even if the trading element will help to constrain these costs. Moreover, it cannot *guarantee* sufficient progress in the timescale required; and if new technologies cannot deliver enough reductions in time, then ultimately we will have to reduce the volume of our carbon-related activities. Emissions trading will not spare us from making difficult decisions and personal or collective sacrifices on the road towards meeting our global carbon reduction targets. (Paragraph 132)

Introduction

The EU ETS is the cornerstone of UK and EU climate change policy

1. **The Government has made it clear that the EU Emissions Trading Scheme (ETS) is "the cornerstone of the Government's policy framework to tackle climate change."[1] Given that the Prime Minister has repeatedly emphasised that, as he puts it, "climate change is probably the greatest long-term challenge facing the human race," and that tackling it is thus "a top priority for this government, at home and internationally,"[2] it would seem no exaggeration to say that the Government has more staked on the success of this one policy instrument than perhaps any other.**

2. The EU ETS began operation on 1 January 2005. It originated as a recommendation in the initial report (June 2001) of the European Climate Change Programme (ECCP), established by the European Commission (the Commission) in March 2000 "to help identify the most environmentally and cost effective additional measures enabling the EU to meet its target under the Kyoto Protocol, namely an 8% reduction in greenhouse gas emissions from 1990 levels by 2008-2012."[3] The importance of the Scheme in the context of the ECCP is underlined by the current European Commissioner for Environment, Stavros Dimas, who describes the EU ETS as "the European Union's single most important measure for reducing greenhouse gas emissions".[4]

3. The EU ETS currently covers around 11,000 power stations and industrial installations across all 25 Member States of the European Union (including over 1,000 sites in the UK), together responsible for approximately 45% of the EU's carbon dioxide emissions (including a similar proportion of the UK's carbon emissions). Under the Scheme, each Member State sets a national cap (referred to as a National Allocation Plan, or NAP) on carbon emissions from its power and industrial sectors, dividing allowances to emit CO_2, equal in aggregate to this overall cap, among each individual installation.(One ETS allowance covers one tonne of carbon dioxide.) As the Government's 2006 Energy Review explains, in order to make this design effective in cutting carbon emissions, "The overall number of allowances allocated should be set below industry's normal emissions levels". This ensures that "each company with a shortfall must either reduce its own carbon emissions or buy allowances from other companies." This in turn "enables companies who can easily lower their carbon emissions to make large cuts in emissions and sell their allowances to those who find it harder to do so."[5]

1 Ev 91

2 Department for the Environment, Food and Rural Affairs (Defra), *Climate Change: The UK Programme 2006*, Cm 6764, March 2006, p iii

3 "EU can affordably reach Kyoto target according to new report", European Commission press release IP/01/816, 11 June 2001

4 "The EU and the fight against climate change", European Commission press release SPEECH/06/276, 4 May 2006

5 Department of Trade and Industry (DTI), *The Energy Challenge*, Cm 6887, July 2006, p 28

4. The additional rationale for the Scheme, beyond the simple objective of leading to emissions reductions, is that it will achieve these carbon savings "in a cost-effective and economically efficient manner," in the language of Article 1 of the European Directive which established the Scheme in law (henceforth the ETS Directive). [6] Indeed, the Commission has estimated that: "The scheme should allow the EU to achieve its Kyoto target at a cost of between €2.9 billion and €3.7 billion annually. This is less than 0.1 % of the EU's GDP. Without the scheme, compliance costs could reach up to €6.8 billion a year."[7] As the Department for the Environment, Food and Rural Affairs (Defra) explains, this cost-effectiveness is expected to follow from the way in which the Scheme allows for permits to emit carbon to be *traded*:

> The Scheme is cost-effective for the economy because emissions reductions are likely to take place at the point of least cost. Most emissions abatement will be carried out by operators with the lowest abatement costs, since these operators will be able to bring the cheapest allowances to the market. Thus emissions trading keeps down the overall cost to the economy of tackling climate change relative to less flexible instruments.

The Department further explains: "This type of scheme is also ideally suited to regulating greenhouse gas emissions, since the nature of greenhouse gases means that emissions make the same contribution to the greenhouse effect wherever they are made. The corollary is that emissions savings have the same environmental benefit wherever savings are made."[8]

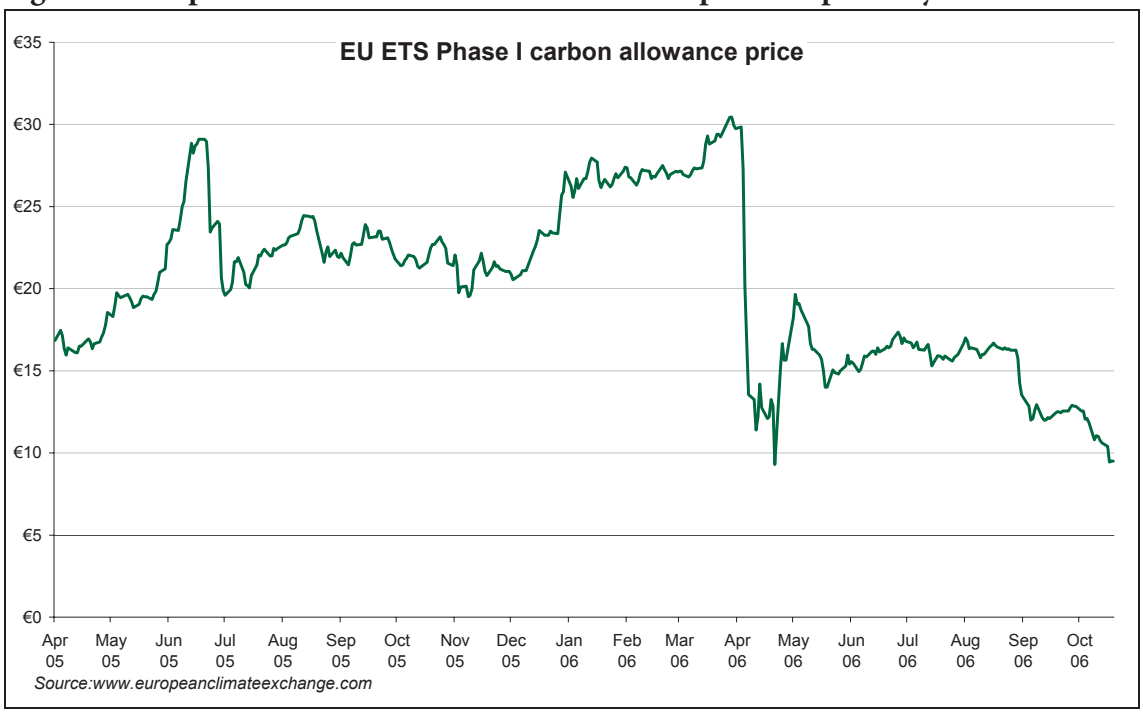
5. Doubts have been raised, however, as to the extent to which the Scheme has begun to deliver these objectives in practice since it commenced operation two years ago. Notably, in April-May 2006 the price of carbon allowances collapsed (see Figure 1), following the release of provisional figures which indicated that emissions in 2005 were lower than expected, leaving the Scheme with a surplus of some 44 million allowances after year one. This prompted fears that Member States had as a whole erred on the side of caution, or generosity, in giving their industries an over-allocation of allowances; and that the whole of Phase I of the Scheme (running 2005-2007) would therefore be ineffectual, failing to provide participating companies with the challenging caps, and accompanying financial incentives, to drive changes in behaviour and a reduction in emissions. Further concerns have been raised as to the prospects of the Scheme in Phase II (2008-2012), and even about its future existence beyond that.

6 Council Directive 2003/87/EC

7 "EU action against climate change", European Commission brochure, September 2005, http://ec.europa.eu/environment/climat/emission.htm, p 8

8 Ev 91

Figure 2 The price of Phase I carbon allowances collapsed in April-May 2006



6. In addition, some observers have made more wide-ranging criticisms of the EU ETS, based on their reservations towards all emissions trading schemes. One set of such criticisms focuses on the practical difficulties facing an international trading scheme, involving the inter-relationships of many different governments and thousands of competing companies. For instance, the think tank Open Europe has argued that the aims of the EU ETS have been undermined by the way in which carbon allowances have been decided by a multiplicity of national bureaucracies; it argues that this has led to allocations which are both ineffective and inefficient, and that the Scheme places too great an administrative burden on participating installations.[9] Another major doubt which has been expressed about the Scheme concerns the fact that it is not a truly global scheme, meaning that those firms which *are* covered by it are not able to compete on a level playing field with international competitors based outside the EU. This has raised the fear that if the EU ETS imposes emissions caps which are truly challenging, the result will be some degree of "carbon leakage": the relocation of economic activity to other countries not subject to the same carbon constraints. The obverse fear is that, if this outcome looks likely, political lobbying will lead to weaker caps, protecting the competitiveness of EU firms, but undermining the effectiveness of the Scheme in driving down carbon emissions.

7. Another set of criticisms objects to emissions trading in principle, or at least an aspect of it: the mechanisms by which participating companies are partly allowed to buy their way out of their emissions targets by funding greenhouse gas abatement projects in other, essentially poorer, countries. The first argument here, notably as put by the campaigning

9 *The high price of hot air: Why the EU Emissions Trading Scheme is an environmental and economic failure*, Open Europe, July 2006

group the Corner House, is that the extent to which such projects actually lead to the greenhouse gas reductions claimed for them is dubious, and that it is far better not to emit a tonne of carbon in the first place, rather than to emit the carbon and seek to buy an offsetting reduction elsewhere. A development of this argument is that allowing the use of offsets within the EU ETS reduces the investment that might otherwise go into low carbon technology within the EU, thus delaying its transition to a low carbon economy, and making its required emissions reduction path still steeper. Meanwhile, as we focus on in greater detail later in this report, unless subject to stringent and deliberate controls, investment in offsetting projects will tend to go towards projects devoted to abating "exotic" greenhouse gases (because these are easier to achieve and provide a much greater financial return), thereby failing to reduce the growth in carbon-intensive growth in developing economies.

8. In November 2006 the European Commission delivered a progress report on the functioning of the Scheme to the European Council and European Parliament. This concluded that the First Phase of the EU ETS "has proved to be a valuable learning period", but outlined a number of issues for further review in respect of the Scheme's design post-2012.[10] These and other issues will now be reviewed by a Working Group on the EU ETS, operating under the European Climate Change Programme, which is scheduled to report by June 2007.[11]

9. What is at stake, in this ECCP review specifically and in the performance of the EU ETS in its Second Phase more generally, is underlined by the Stern Review on the Economics of Climate Change. Commissioned jointly by the Prime Minister and the Chancellor, the Stern Review finds that, to mitigate the risks of dangerous climate change and the possibly irreversible social and economic disruptions which could accompany it—on a par with "the great wars and the economic depression of the first half of the 20th century"—three main policies are required. Carbon pricing, "through taxation, emissions trading or regulation, so that people are faced with the full social costs of their actions",[12] is the first of these three key recommendations. (The others are: i) enhanced support for new technology; and ii) education and incentives to overcome the behavioural and institutional barriers to radically improving energy efficiency.) While Stern highlights the potential of three different means of imposing a price on carbon, it is emissions trading which has thus far made the most international progress, and which offers the most potential for establishing a global carbon price in the short to medium term future. Fledgling emissions trading schemes are beginning to emerge in other countries, but the EU ETS is by far the biggest, most ambitious, and most established of these. The development of the EU ETS will thus be instrumental in influencing the development of emissions trading worldwide; and thus the EU ETS should be regarded as *the* mechanism for putting a price on carbon internationally. Still more pointedly, as Stern puts it: "Decisions made now on the third

10 "Building a global carbon market – Report pursuant to Article 30 of Directive 2003/87/EC", European Commission COM(2006)676,13 November 2006, http://ec.europa.eu/environment/climat/emission.htm,, p 10

11 "ETS Review", European Commission update, http://ec.europa.eu/environment/climat/emission.htm

12 "Publication of the Stern Review on the Economics of Climate change", HM Treasury press release, 30 October 2006

phase of the EU Emissions Trading Scheme pose an opportunity for the scheme to influence, and be the nucleus of, future global carbon markets."[13]

10. **Within a matter of months the European Commission is set to have reached decisions on the next two phases of the EU ETS which will be vitally important, not just to the success of this Scheme, but to the establishment of carbon trading worldwide. The EU ETS has received serious criticism for its design to date, concerning the efficiency and effectiveness with which it sets carbon allocations, and the way in which it relates to countries outside the EU, both in terms of dealing with international competition and of funding offsetting projects in developing economies. These challenges must be addressed if the EU ETS is to prove the credibility of emissions trading as the foremost mechanism for tackling greenhouse gas emissions worldwide. In meeting these challenges, and making a success of emissions trading, Europe would be in the position to mould a global carbon market, something which only underlines the importance of getting the design of the Scheme right. The converse risk, if Member States and the European Commission get the terms of Phases II and III wrong, is that the credibility and potential effectiveness of emissions trading is fatally and permanently undermined.**

Focus of this inquiry

11. The Environmental Audit Committee (EAC) has substantively looked at the EU ETS in one previous report, *The International Challenge of Climate Change: UK Leadership in the G8 & EU*, which also looked at the Kyoto Protocol and the post-2012 framework. In this report, our predecessor Committee found that Phase I of the Scheme was unlikely to yield any significant carbon savings and that far tougher targets would be needed in Phase II. Its overall conclusion was that: "emissions trading will only work effectively if it results in an increase in the price of energy for industry, business and even domestic consumers. Only then will the necessary incentives to prompt behavioural change and investment in low-carbon technologies arise."[14] In this new report, and with the benefit of data from the first year of Phase I and information on the National Allocation Plans for Phase II, we examine the evidence on how much progress the Scheme is making towards these ends.

12. We launched this inquiry in July 2006, with evidence being taken in November and December. There were three reasons for this timing. First, the start of the inquiry came shortly after publication of end of year figures for the first year of the Scheme, and with that the collapse in the carbon trading market, allowing for an informed review of Phase I in its entirety. Second, with the publication in the summer of most of the proposed National Allocation Plans for Phase II, including the UK's, and the Commission's decisions on them by the end of the year, it allowed for a relatively confident appraisal of the Scheme's effectiveness throughout the whole of the Second Phase. Third, it allowed for publication

13 *Stern Review: The Economics of Climate Change,* HM Treasury, October 2006, p 324

14 Environmental Audit Committee, Fourth Report of Session 2004-05,*The International Challenge of Climate Change: UK Leadership in the G8 & EU,* HC 105, p 22

of this report to come in time to make recommendations to the Government regarding its input into the ECCP review of the Scheme, looking forward to Phase III and beyond.

13. In the course of our inquiry we received memos from 26 organisations, taking oral evidence from the Environment Agency, WWF, RSPB, the Association of Electricity Producers, the TUC, EEF, Climate Change Capital, and the Carbon Trust, culminating in a session with the Minister for Climate Change, Ian Pearson MP. In addition we travelled to Brussels for useful discussions with Commission officials, and pan-European environmental groups. We would like to thank all involved for their assistance.

14. Throughout our inquiry we have had dual objectives in mind. The first has been to assess the effectiveness of the EU ETS overall, and to identify the main issues relating to its future success. The second has been to focus in particular on the UK, reviewing the effectiveness of Government policy, assessing the impacts of the Scheme on UK participants and carbon emissions, and making recommendations to the Government on its future policy, notably its input into the ECCP review.

An assessment of the Scheme's impacts to 2012

The record of Phase I

15. **Two years into the operation of the EU ETS, there is much to applaud. The very existence of such a complex system, involving hundreds of firms and thousands of installations in 25 countries, is an impressive achievement in its own right, especially considering the tight timetable under which it was set up.[15] In operation, the Scheme has shown itself so far to be an administrative success, with the overwhelming majority of installations reporting their independently verified CO_2 emissions, and surrendering the appropriate number of allowances to cover them, to the required deadlines.** In the UK, for example, over 99% of installations submitted their verified emissions reports and surrendered the correct amount of allowances within the deadlines or shortly thereafter.[16] Only a very small number of UK operators have been shown to have had excess emissions over their total of allowances, and firms without sufficient allowances to cover their emissions have been prosecuted and fined.[17] More widely, the systems for trading

15 As the memo from Defra put it: "The EU ETS has been developed and implemented against a very tight timetable. The Emissions Trading Directive was finalised by the Council and the European Parliament in October 2003 and gave Member States just two months to transpose the Directive into national law. Member States then had just twelve months to prepare National Allocation Plans and to implement the Scheme only 12 months later. Although not all, Member States were able to meet this challenging timetable, the Scheme was operational across the majority of the EU by early 2005, demonstrating that it is possible to take swift and decisive action to implement measures to combat climate change." Ev 91

16 Ev 1

17 "Civil penalties issued today under EU Emissions Trading Scheme", Environment Agency press release , 6 December 2006

allowances have also proved to work effectively, with some 350 million allowances (worth an estimated €9 billion) being traded internationally during 2005.[18]

16. In reviewing the effectiveness of the EU ETS, however, our main interest is in assessing the extent to which it is driving significant cuts in carbon emissions. Here, the record of Phase I is much more dubious. The key issue is the size of the caps on emissions imposed by Member States' National Allocation Plans, and the resulting aggregate cap across the entire EU to which they add up. The fear expressed by many observers when these Phase I NAPs were first published was that most were far too unchallenging, meaning that little progress would be made in driving down EU carbon emissions. This was certainly the view of our predecessor Committee who, in examining the prospects for Phase I at its outset in early 2005, observed that "relatively few countries have set target reductions of more than 3%, even when they are very far from achieving their Kyoto target; while Portugal and the Netherlands have actually set caps above their business-as-usual forecasts."[19] This led them to conclude: "Phase 1 of the EU ETS has rightly been described as a "race to the bottom" in terms of the target caps set by individual member states. As a result, there is little prospect that it will yield any significant carbon reductions and this is reflected in the low price at which carbon is trading."[20]

17. If this was the view which many held at the outset of Phase I, what happened in May 2006, when first year figures for the number of allowances surrendered in each Member State were published, seemed only to increase the doubts. Emissions for 2005 were revealed to have been considerably lower than the number of allowances allocated, leaving a surplus of some 44 million allowances after the first year of the Scheme. The conclusion which many drew was that most Member States had allocated allowances to installations in excess of their ordinary needs. If true this would mean that Phase I will be even less effective than our predecessor Committee thought. It would suggest that most of the Business As Usual (BAU) emissions projections, used by Member States as a basis from which to calculate the size of the cut to be imposed by their National Allocation Plans, were seriously inflated and inaccurate. In this way, it would not just be that most Member States were cutting too little from their Business As Usual emissions; they would be cutting too little from a projected level actually *above* their BAU emissions. This in turn would mean that the majority of installations would have been given sufficient allowances to meet their ordinary needs in full and would not therefore be directly affected by participation in the Scheme. Meanwhile, the weak aggregate cap would lead to a low market price for traded allowances, meaning that those firms which did end up with a shortfall in allowances would be faced with only a weak financial incentive to strive for emissions reductions.

18. The majority of evidence we examined backed up this interpretation. While sounding a note of caution given that only one year's emissions figures had been published, the

18 *Emissions Trading and the City of London*, City of London, September 2006, p 4

19 Environmental Audit Committee, *The International Challenge of Climate Change: UK Leadership in the G8 & EU,* para 27

20 Environmental Audit Committee, *The International Challenge of Climate Change: UK Leadership in the G8 & EU,* para 30

memo we received from Defra implied the belief that Phase I as a whole had over-allocated allowances: "Industry should have to take some action to achieve surpluses that can be sold, they should not receive more allowances than they need in the first place. However, it is evident from 2005 emissions results that more allowances were available than were required for compliance with the Scheme, hence deflating the value of allowances, and, consequently, diminishing the financial incentive to reduce emissions over buying allowances."[21] The Environment Agency was slightly more forthright, stating: "During the first year of the scheme, most Member States emitted less than their 2005 allocations. […] This suggests that most Member States have allocated allowances to industry above business as usual".[22] In the view of RSPB, "In Phase I, all member states have been afraid of placing their countries at a competitive disadvantage, and they have consequently overallocated allowances", with WWF concluding that the EU ETS "is currently failing to deliver real cuts in greenhouse gas emissions." A recent report by the Institute for Public Policy Research (IPPR) stated baldly: "In the first year of trading, 2005, the EU ETS did not yield any emissions reductions. […] Member states themselves decide the emissions reductions they will take. Many are anxious to avoid making more effort then their neighbours. Such a 'race to the bottom' can only lead to failure."[23] To the Carbon Trust, "The overarching lesson is that the market and verification has worked, but the initial allocation didn't".[24] (On this latter observation, that the verification system has worked, we would add a note of caution by observing that it has not yet been tested under the more difficult circumstances that would accompany genuinely challenging emissions caps and their resulting scarcity of allowances, a situation which might provide greater incentives to falsify emissions records.)

19. The situation in the United Kingdom stands slightly apart. While Phase I appears to have a surfeit of allowances, not every Member State has contributed to this over-allocation. In the figures for 2005, the UK is shown to be one of five Member States whose emissions exceeded their allocations; the UK's shortfall in allowances is far greater than any other country's. While this suggests that the UK has set a more challenging NAP than other Member States, it does not necessarily follow that this more stringent national cap has led to more – or indeed any significant – carbon reductions, whether in the UK or the EU as a whole. This is by virtue of the Scheme's multi-state trading nature. Given that there is a net surplus of allowances across the system as a whole, and that this appears to be the result of a general over-allocation, then not only will it have been cheaper for those UK firms with an under-allocation to make up their shortfall by purchasing allowances on the market rather than changing their production processes, but this money will have tended not to subsidise carbon abatement in other countries, rather to have simply bought an unneeded proportion of their excessive allocations. In a report published in July 2006, the think tank Open Europe estimated that the first year of Phase I could have seen a net outflow from UK participants of approximately £470 million to "companies in other

21 Ev 92

22 Ev 2

23 *Trading Up: Reforming the EU Emissions Trading Scheme*, IPPR, December 2006, p 6

24 *Allocations and competitiveness in the EU ETS: Options for Phase II and beyond*, Carbon Trust, June 2006, p 7

member states which can then make windfall profits" without decreasing their emissions;[25] in other words, as the report put it, this money had bought nothing but "hot air". Neither the Environment Agency nor the Carbon Trust could confirm these figures; and Professor Grubb of the Carbon Trust did stress that, even in Phase I, "the UK could end up as a net seller still and make money out of the system" if, for instance, declining gas prices in the next year led to a switch away from more carbon-intensive coal burning in the UK. However, he also suggested that if UK emissions stayed at current levels, UK operators would need to purchase around 20 million allowances net per year in Phase I. (At the current allowance price of around €5, this would represent a sum of around £67 million.)[26]

20. We did receive some evidence to suggest, on the contrary, that Phase I *was* leading to some genuine carbon abatement. Appearing before us, the Climate Change Minister stated that "there will be a number of companies within the United Kingdom and in other countries that have reduced their carbon emissions directly as a result of the scheme", and drew our attention to a study by academics from the Massachusetts Institute of Technology (MIT) and Fondazione Eni Enrico Mattei (FEEM) that suggested that "emissions reductions across the EU resulting from implementation of the ETS in 2005 could be somewhere in the region of 50 million tonnes of carbon dioxide to 200 million tonnes of carbon dioxide".[27]

21. The study in question[28] begins from the starting point that it is impossible to tell, simply from the fact that 2005 emissions were below allocation levels, the extent to which it was the allocations that were too high or the emissions that were lower than forecast – and if the latter, the extent to which this reflected active carbon abatement. In setting out to find the answer, the study starts with the average historical baseline emissions data for the years 2001-03, gathered by Member States as the basis for their BAU projections for the years 2005-07 (in turn the basis of their caps from these levels represented by their Phase I National Allocation Plans). It then does its own calculations of what Business As Usual emissions would have been in 2005 in the absence of the EU ETS. By applying rates of rising economic output and declining improvements in carbon intensity since 2002 to these historic baselines, it projects that, if the EU ETS had not existed, the emissions for 2005 would have been between 50 million tonnes of carbon dioxide ($MtCO_2$) and 200$MtCO_2$ higher than the actual verified emissions for that year. It concludes that the EU ETS must have driven carbon efficiency improvements, equal to these figures, in its first year.

22. The MIT/FEEM study contains some interesting analysis and argument. Given that it was only published in November 2006, and only raised by the Minister in our final evidence session, we have been unable to study its methodology in great depth, nor gain

25 *The high price of hot air: Why the EU Emissions Trading Scheme is an environmental and economic failure*, Open Europe, July 2006, p 3

26 Based on an exchange rate, as of 5 January 2007, of £0.673 to 1 Euro. *http://www.sussex.ac.uk/Units/currency/*

27 Q250

28 D Ellerman and B Buchner, *Over-Allocation or Abatement? A Preliminary Analysis of the Eu Ets Based on the 2005 Emissions Data*, Fondazione Eni Enrico Mattei, November 2006

the views of other witnesses and observers on its conclusions. However, we would make the following main observations as to the Minister's use of its findings. The first is that its stated carbon savings are from a BAU projection, rather than an estimate of absolute reductions from historical levels, and are therefore less impressive in terms of progress towards Kyoto targets, and further absolute reductions in carbon beyond that, than might at first appear. In other words, the cited figure of a 50-200$MtCO_2$ reduction does *not* mean that emissions from those installations in the EU ETS went down by a net figure of 50-200 million tonnes in 2005 compared to emissions in 2004 or some previous year; rather, it is that they are projected to have emitted this amount less than they might otherwise have emitted, had their emissions grown in line with (this study's) BAU forecasts. Secondly, the size of even these relative carbon reductions should be subject to some doubt, given that, as the authors themselves point out, their calculations "can never be determined with certainty because the counterfactual is not observed and never will be"[29]—in that such calculations depend on both the accuracy of historical baselines and the applicability of the modelled assumptions as to their BAU growth, none of which can be known for sure. Finally, in dwelling on the high-level plane of macroeconomics, the study neither cites any examples of a firm which has reduced its carbon emissions, nor offers a definite scenario for how firms might have reduced their emissions even in theory. Its portrayal of the means by which its projected carbon savings have arisen is vague: it imagines simply "the small, incremental changes in production and production processes that managers of existing facilities make in adjusting to new economic realities."[30] This is not to imply that its findings are necessarily wrong; but it is to suggest that they ought to be supplemented by further evidence before they can be relied on to state conclusively that Phase I has indeed had such effects on installations in practice.

23. In supplementary evidence, the Minister also referred to Defra analysis which suggested that:

> [C]omparing 2003 and 2005 emissions in the UK from incumbent installations in the EU ETS shows a reduction of around 10$MtCO_2$ (4%). A number of new installations commenced operation and entered the Scheme in 2004 and 2005, emitting a total of around 5$MtCO_2$ in 2005. Therefore, the net total reduction in emissions from UK installations (incumbent and new) in the EU ETS was approximately 5$MtCO_2$ between 2003 and 2005.[31]

As we received this evidence at the end of our inquiry we are unable to assess the strength of its conclusions.

24. Other witnesses also suggested that Phase I was leading to some carbon reductions. Both the Carbon Trust[32] and the TUC[33] suggested that there was some evidence of

29 Ellerman and Buchner, p 17

30 Ellerman and Buchner, p 34

31 Ev 170

32 Q222

33 Q139

resulting carbon reductions, though here again we did not hear any specific examples of individual installations. The Association of Electricity Producers (AEP), meanwhile, suggested that: "Putting a value on carbon has also aided the economics of achieving emissions reductions through the co-firing of biomass with coal or oil, and in 2005 this resulted in the sector generating about 3 TWh that were eligible for Renewable Obligation Certificates." In addition, they mentioned "one plant in the Sector" was converted from a Combined Cycle Gas Turbine (CCGT) to a Combined Heat and Power (CHP) plant "with significantly improved efficiency."[34]

25. The Environment Agency appeared to at least partially contradict this, however, suggesting that there had been no documented cases of businesses reducing their emissions as a result of participation in the Scheme, and in particular suggesting: "What we have seen is some companies, for example, Drax, has invested time and money in putting in facilities for the burning of biofuels, but, because of the low carbon price, at the moment I understand that has actually almost stopped because there is little incentive to burn other than coal."[35] Indeed, AEP themselves admitted that overall the first year of the Scheme had had essentially no effect on emissions from UK power generation: "In fact […] there was no change in emissions as such in 2005, but then, equally, one has to recognise that if you look at gas prices during that period the level of the carbon allowance price was not sufficient to drive coal to gas switching".[36]

26. **While the Scheme so far has been an administrative success, its record in reducing carbon emissions is far less impressive. It appears to us that Phase I will have very little impact on carbon emissions across the EU. Allocations of allowances to emit carbon were too generous, and the market price of them consequently too low, to drive a transformation in business strategies and technical processes. Overall, the emissions projections appear to have been inaccurate and inflated, and the national caps derived from them too unambitious. There is some excuse for this in Phase I, given the difficulties in collecting accurate baseline data and the compromises needed to achieve speedy implementation of the initial phase of the Scheme; and for these reasons it has always been characterised as a "learning by doing" phase. But lessons must actually be learnt, and things radically improved, in Phase II and beyond.**

27. **While this view is contradicted by the study by academics from the Massachusetts Institute of Technology and Fondazione Eni Enrico Mattei, we have some doubts as to the strength of its conclusions**, particularly as it does not provide a single concrete example of an installation which has actually reduced its carbon emissions as a result of the EU ETS. **In view of the reliance which the Minister is now placing on this one piece of research to argue that Phase I has significantly reduced emissions in the EU, the Government should commission an independent review of the study's findings. Overall, we would welcome more research into the effects of the Scheme on participating companies. Where there is strong evidence that the EU ETS is driving**

34 Ev 39

35 Q3

36 Q107 Mr McElroy

behavioural change that cuts emissions in absolute terms, this ought to be given significant publicity, both to spread the lessons of good practice and to bolster domestic and international support for emissions trading.

28. The UK stands slightly apart in Phase I in that it has set itself a more challenging national cap than other Member States. But owing to the general over-allocation of allowances across the EU ETS as a whole, it does not appear that the UK's shortfall of allowances has driven any significant carbon reductions either in the UK or in the EU overall. In other words, the UK has been a net buyer of allowances from the Scheme, and thus a net financial contributor to it, without necessarily funding any carbon abatement. This does not mean that the UK was wrong to impose a more stringent national cap, nor that the EU ETS is a failure, nor that the UK would always be disadvantaged within it. What it underlines, however, is the need for the European institutions to ensure that all National Allocation Plans are in future both stringent and equally stringent, so that the Scheme as a whole is effective, and so that all Member States are competing on a level playing field.

29. **Overall, the extent to which the EU ETS, and any other trading schemes, is judged a success should depend on two main things: the extent to which emissions are reduced, and the extent to which a stable and effective carbon price is generated. To date, the EU ETS has had very questionable effects on both measures. In particular, it has been undermined by weak caps and inaccurate and unsatisfactory methods of allocating allowances to individual sectors and installations. Both shortcomings have been exacerbated, if not wholly caused, by the instrumental role of a multiplicity of national bureaucracies, which have set caps and allocations through a methodology which was not just cumbersome, but prone to being influenced by industrial lobbying.**

The prospects for Phase II

30. Phase II of the EU ETS will run from 1 January 2008 to 31 December 2012. Prior to its operational start in January 2008, Member States had first to submit their proposed National Allocation Plans by 20 June 2006, and the European Commission had then to assess, amend if necessary, and approve them by 31 December 2006.[37] The Commission published its decisions on the first 10 NAPs (those of Germany, Greece, Ireland, Latvia, Lithuania, Luxembourg, Malta, Slovakia, Sweden and the UK), together accounting for 42% of the allowances allocated in Phase I, on 29 November 2006. In this first wave of decisions, the Commission revised the national caps in question downwards by an average of nearly 7% from the allocations as originally proposed by the Member States concerned, a cut equating also to around a 7% cut in absolute terms from verified emissions from the installations in these Member States in 2005. The United Kingdom was the only one of these 10 Member States whose proposed NAP was accepted as it stood, and not revised downwards. As Professor Grubb of the Carbon Trust understood it, the reason "the Commission did not challenge the UK Allocation Plan is firstly because it was actually the only one […] which involved any significant cut-back in aggregate from current levels, and

37 In practice these deadlines were missed in the case of a number of Member States.

also the UK is on track to meet or exceed its Kyoto commitment."[38] (On 5 February 2007, the Commission published its decision on the 11th Phase II NAP, that of Slovenia, which had proposed a 9% reduction on its Phase I NAP. The Commission approved this without downward revision, making Slovenia only the second Member State, after the UK, to have its NAP approved as proposed.)[39]

31. **The Government ought to be commended for its leading contribution to the robustness of Phase II, and future strength of the EU ETS, in proposing a more stringent NAP than many other Member States; as well as submitting it to the Commission on time, unlike many others. That the United Kingdom had the only national cap (in the initial batch of 10 to be reviewed) that was accepted by the Commission as submitted, and without being revised downwards, clearly highlights the fact that in terms of setting limits to emissions the Government is leading the way in Europe.**

32. In view of the timings involved, most of the written and oral evidence we received reviewed the National Allocation Plans for Phase II as originally proposed by Member States, rather than as revised by the Commission. The consensus of opinion was that, overall, Member States had again refrained from imposing stringent cuts, and that thus the aggregate cap across the entire Scheme risked being too weak to drive significant carbon abatement within Europe. Diplomatically, the memo from Defra commented that: "The UK has worked with counterparts in other Member States, at the highest level, calling on caps to be set in line with the requirements of the Directive, and to ensure real scarcity in the market. It is inevitable that there will be some Member States who do not set sufficiently tight caps. The UK will therefore support the Commission in their consideration and rejection of such caps."[40] The Environment Agency was slightly more direct: "For Phase II, our indication, based on the published draft National Allocation Plans (NAPs), is that the same situation [of over-allocations as in Phase I] could be repeated."[41] According to the Carbon Trust's analysis, the collective impact of the proposed NAPs "was going to be too weak to sustain a credible carbon price during the 2012 period".[42] Climate Change Capital found that: "Domestic agendas have seen some Member States set caps in their Phase 2 NAPs that are far higher than those requested by the European Commission or that their verified data merits, putting the integrity of Phase 2 of the EU ETS at risk."[43] The verdict of RSPB, meanwhile, was that "the Phase II cap is lax across Europe".[44] To WWF, the proposed NAPs "suggest minimal level of effort beyond Business as Usual (BAU) for a number of countries", leading them to conclude that

38 Q208

39 "Emissions trading: Commission approves Slovenia's national allocation plan for 2008-2012", European Commission press release, IP/07/136, 5 February 2007

40 Ev 97-8

41 Ev 2

42 Q203

43 Ev 66-7

44 Ev 18

"collectively across Europe […] the cap for phase II could be very weak", and even that "potentially zero abatement could take place within the EU."[45]

33. **That most of the draft National Allocation Plans originally proposed by Member States for Phase II were so inadequate suggests a worrying lack of public and political understanding of the dangers of climate change, and of the need to tackle it, across the EU as a whole. This highlights the vital role which must be played by the Commission, given its ability to operate at one remove from the competitive national interests of individual Member States, to impose the cutbacks in allocations required by the Scheme as a whole. A corollary of this is that the UK Government must do its utmost both to persuade other EU states of the need for greater action, and to bolster the position of the Commission in guiding Member States in the right direction.**

34. Following the Commission's decisions on the first 10 National Allocation Plans, we took oral evidence from the Carbon Trust and from the Minister for Climate Change. On the basis of these initial decisions, the Carbon Trust estimated that the cutbacks imposed on all 25 Phase II NAPs in aggregate would be around 10%,[46] which they stated was the minimum figure required in order to generate a robust carbon price signal in Phase II.[47] For his part, the Minister welcomed the Commission's decisions, arguing that, as a result, "Phase II will be a significant improvement on Phase I in terms of the CO_2 reductions that will be seen as a result of it." He further commented that: "I would like to think that the UK and our approach in setting our own NAP and getting it in early to the Commission influenced their thinking and maybe facilitated them in taking a robust approach to Phase II".[48]

35. **The European Commission's decisions on the National Allocation Plans for Phase II are encouraging—not just in terms of making it more likely that the EU ETS will begin to drive real carbon abatement in its Second Phase, but in terms of increasing confidence in the entire viability and future development of the Scheme.**

36. While the Commission's decisions on these National Allocation Plans are indeed encouraging, they do not necessarily mean that Phase II of the EU ETS will in itself make an instrumental difference to the rise in global carbon emissions towards levels that may trigger dangerous and irreversible climate change. First, as the Carbon Trust submission argued, there are other variables beyond the simple aggregate cap on allowances that could affect the carbon price in Phase II. One is the expected reverse in the recent upward trend in gas prices as new gas supply infrastructure comes on stream; this could incentivise a switch back from coal to gas in electricity generation, which, as gas is less carbon-intensive than coal, would tend to lower emissions and with them demand for ETS allowances. (While lowering emissions in this way would be a good thing in the short term, it would

45 "Use of CDM/JI project credits by participants in phase II of the EU Emissions Trading Scheme – A WWF summary of the preliminary findings from the Ecofys UK report", WWF memo to the Environmental Audit Committee, 6 October 2006, p 3 (unpublished)

46 Q207

47 Q203

48 Q252

also, by reducing the carbon price, reduce the financial incentive to seek energy efficiencies and invest in low carbon technologies.) Another is the use and plentiful supply of credits from Clean Development Mechanism (CDM) projects in the developing world (about which more will be said in a later section); given that in Phase II these can be used within the Scheme, in addition to and instead of ETS permits, their use will in effect inflate the cap on emissions within the EU to a certain degree.[49] The Minister himself argued that, even though the Government now had an idea of the size of cuts from BAU levels imposed by Phase II NAPs following the Commission's decisions, it was still very difficult to assess what the average carbon price would be in the next Phase.[50]

37. Secondly, as the Carbon Trust stressed to us, since the EU ETS only covers around 45% of the EU's carbon emissions, and only around a third of the EU's total greenhouse gas emissions, it is impossible to state simply from the cutbacks imposed by Phase II caps whether the EU as a whole and individual Member States within it will meet their Kyoto commitments. In amending the proposed NAPs for Phase II, the Commission has had a mandate to ensure these allocations give a broadly proportionate cutback to the sectors covered by the Scheme. However, it is possible Member States might not make sufficient progress in cutting emissions from the rest of their economies by 2012, the end of the first Kyoto period; in order to comply, they would then have to fund equivalent greenhouse gas reductions in other countries, for instance via CDM projects.[51]

38. Thirdly, it ought to be kept in mind that these Kyoto targets themselves are only a first step, and that much steeper cuts in greenhouse gas emissions will have to take place very soon after 2012 in order to meet UK and EU targets, and minimise the effects of global warming. Thus, as Professor Grubb outlined, while the Commission's decisions on the Phase II NAPs could be described as relatively tough within their own context, "The Commission's job formally is to enforce the agreement which exists in the form of the Emissions Trading Directive, not to impose tougher cuts per se. […] I think going beyond that would have been very difficult, both legally and politically, to be honest, for the Commission itself."[52]

39. **While the Commission's decisions on the Phase II NAPs are encouraging, it is important to keep the potential impacts of Phase II in perspective. Its effectiveness in driving carbon reductions depends on several variables, not all of which can be known with certainty at this stage. And while it looks likely that it will put the EU roughly on course to meet its Kyoto commitments, this cannot yet be known for sure. Furthermore, in order to meet UK and EU climate change targets beyond 2012, much greater action—both within the EU ETS and in the form of complementary policies—will be needed, and soon.**

49 *Allocations and competitiveness in the EU ETS: Options for Phase II and beyond*, Carbon Trust, p 9

50 Q254

51 Q204

52 Q204

40. **One decision on the shape of Phase II, which will have a profound effect on its efficiency and effectiveness, and with which we are signally disappointed, was taken long in advance: the maximum limit of allowances which can be auctioned. Under the ETS Directive, a maximum of only 10% of allowances can be reserved for auction in Phase II, rather than being allocated to firms for free. We believe it was wrong of Member States and the Commission to impose such a restrictive limit on auctioning in Phase II. In our view, auctioning allowances should lead to more accurate allocations, reduced public costs and bureaucracy, and greater internalisation of environmental costs in business decisions. In sectors where there are not strong concerns as to the effects on competitiveness of requiring firms to purchase their allocations upfront, we strongly support 100% auctioning. In auctioning 7% of its Phase II NAP, the Government is doing far more than any other Member State in this Phase, but this level is still far less than the participants could withstand and which would be good for the Scheme as a whole.** We look in greater detail at the mechanics of auctioning, and its advantages over other methods of allocating allowances to individual firms, in the section of the report where we make recommendations for Phase III.

Impacts on firms in the UK

41. The firms subject to the EU ETS in the first two phases can be broadly divided into two groups: power companies, on the one hand; and energy intensive manufacturing industries, such as steel, glass, paper, and ceramics firms, on the other. While there are certainly notable differences within these broad sectors,[53] overall we can talk about the power sector being differentiated from the industrial sectors in three main ways: i) it is more capable, at least in principle, of reducing carbon emissions fairly substantially in the short term (through fuel switching from coal to gas); ii) it does not suffer from the same exposure to international competition; and, following on from this latter point, iii) it is generally more able to pass on the costs of the Scheme to its customers.

42. In keeping with these broad definitions, the Government has treated these two types of firms differently in the first two phases of the Scheme: the power sector has been given cutbacks in allocations from its BAU emissions; and in Phase II is having to buy around 15% of its allocation of allowances (equating to 7% of the whole UK NAP) at auction. The industrial sectors, meanwhile, have overall been given all the allowances they need in line with BAU projections, and are also receiving all of their allocations in both Phases I and II for free. Throughout our inquiry we considered a large amount of evidence regarding the Government's treatment of these sectors, concentrating on their differing needs and capacity for carbon reductions, and the resulting economic impacts on them. In looking at these questions, we have taken an interest not just in how these sectors are responding to the Scheme in terms of carbon abatement, but also how they are being affected economically—both in the context of UK jobs and competitiveness, and in terms of the

53 Among power companies, for instance, there are differences according to how carbon-intensive their portfolio of generating installations is, and to what extent they are generators or distributors of energy. Within the industrial sector, as the Carbon Trust has analysed in some detail, different subsectors face differing levels of exposure to energy costs and international competition, while differing firms within these subsectors will face differing impacts according to the type and location of their plants.

dangers of "carbon leakage" (in other words, the relocation of firms to other countries which are not subject to the same carbon constraints). We have also looked at how well the EU ETS appears to be working with other domestic policies designed to move these sectors towards a low carbon future.

43. The question of the impact of the EU ETS on the power sector is dominated by the issue of windfall profits. In November 2005, the DTI published a study which estimated that the UK power sector stood to earn an extra £800 million a year (net) throughout Phase I, as a result of its participation in the Scheme.[54] A June 2006 report by the Carbon Trust, meanwhile, gave a figure of €1 billion (£673 million) for the year 2005.[55] While the size of these figures was contested by the Association of Electricity Producers in their session with us, they did not contest the fact that the power sector was making a financial gain.[56] These profits have arisen because power companies have raised their prices to incorporate the market value of all the ETS allowances they have used to cover their emissions, even though the majority of these allowances were not purchased on the market but given to them, in their original allocations, entirely for free. Economists explain that the reason for this is that prices are set with reference to marginal producers, where the impact on profitability of allowance prices – not just in terms of those they might have to buy, but of those already allocated to them which they could choose to sell to the market rather than use up in producing electricity – is greatest. The other, crucially enabling, factor is that UK power companies essentially do not face any international competition, which might otherwise restrain price rises. For its part, the memo from Defra describes this as "a natural pricing response from the industry", and indeed welcomes it as reflecting the cost of carbon in the price of electricity.[57] The Government estimates that the EU ETS is responsible for a quarter of the rise in wholesale electricity prices (by 72%) between 2004 and 2005 (the remainder being due to wider rises in fuel prices).[58]

44. The Association of Electricity Producers were keen to point out that the power sector was the only sector to be given a cutback in allocations from Business As Usual projections in both Phases I and II, and was therefore the only sector bearing a direct cost from the Scheme. Indeed, we received several submissions from power companies which argued that their sector had been unfairly singled out by the Government in this respect, while arguing in addition that the resulting increases in power companies' costs was also hurting industry and consumers through raising electricity prices. A typical example came from Drax:

> All effort on CO_2 reduction in Phase I and II has been allocated to the power sector on the assumption that fuel switching was fairly easy and possible. In reality, the sector did not respond in the manner that had been assumed and little switching

54 *Implications of the EU Emissions Trading Scheme for the UK Power Generation Sector*, IPA Consulting, 11 November 2005, http://www.dti.gov.uk/files/file33199.pdf , p 1

55 Based on an exchange rate, as of 5 January 2007, of £0.673 to 1 Euro. http://www.sussex.ac.uk/Units/currency/

56 Qq 103-4

57 Ev 94

58 Ev 94

> occurred from coal to gas. Indeed, over the last few years the sector has seen an increase in coal burn. By setting a range of emissions reduction beyond what is technically and economically feasible for the sector, operators have had to purchase additional allowances in the market, leading to a considerably higher than anticipated cost of EU ETS compliance which in turn has fed through to increased electricity prices for the UK consumer.[59]

45. We find this argument rather odd. In effect, the power sector is arguing that the reason it is failing to reduce its emissions is that the price of allowances is too low to incentivise fuel switching from coal to gas; but then complaining of the cost of having to buy allowances instead of reducing emissions. What is more, it is hard to see how the cutback in its allocation is in itself having an impact on energy prices and thus on business and consumers. Given that the power sector is effectively charging for the market value of all the allowances it uses anyway, whether it receives these for free or has to buy them, it is hard to see how giving it a larger allocation of free allowances would reduce electricity prices. The only effect this would be sure to have would be to increase the power companies' windfall profits.

46. We were interested to find out how power companies were using these profits; in particular, whether they were investing it in low carbon energy generation. However, as Professor Grubb of the Carbon Trust observed to us, while the power sector

> claims it is not getting enough revenue really to fund new investment [,…] we now have an instrument which is certainly giving it a significant amount of revenue. It is still not investing. Why? Partly because of uncertainty, and if you are faced with big uncertainty very often your ration choice is actually to sit there and wait, and I think that is what the power companies are doing. […] They might invest in renewables to the extent that the renewables support mechanism helps it, but basically the fundamental response of the power sector is to sit there transfixed while the number of uncertainties stare them in the face. Until we resolve that uncertainty and we resolve it in a low carbon direction and in a way which enables the sector to have enough resources to risk a few billion pounds here and there in new stations, we will continue to have problems in the power sector.[60]

47. This analysis is essentially supported by the memos we received from power companies themselves, which repeatedly stressed that there would need to be greater certainty regarding long term carbon pricing and policy before large scale investment in abatement would be forthcoming. The wider question raised in this context concerns the extent to which the EU ETS fits together with UK energy policy, as well as how both of these fit together with the UK Climate Change Programme. The main issue raised in this respect was made by members of the Clean Coal Task Group, who argued for favourable allocations to be given to new entrant coal-fired power stations in order to encourage their construction, along with extra support for Carbon Capture and Storage to mitigate their

59 Ev 136

60 Q241

extra impact on emissions over gas. British Energy, meanwhile, argued that by maintaining subsidies for renewable energy in addition to the EU ETS there was a danger of providing renewables with a double benefit, at the expense of other low carbon options; they also called explicitly for the Climate Change Levy to be phased out "since it tackles the same issue" as the EU ETS.[61]

48. **The Government has been right to impose cutbacks on the power sector's allocations, and to put a proportion of its Phase II allocation up for auction. The power sector has no grounds for complaint about this, given both that it is effectively earning windfall profits from those allocations it is receiving for free, and that it is broadly holding onto its profits rather than investing them in low carbon energy generation. Revenue raised by auctioning these allowances must not be subsumed into general spending commitments, but should be used demonstrably to assist measures to address climate change. The Government should also examine the benefits of recycling a proportion of this revenue in the form of reductions in other taxes.** We outline our recommendations for the use of auction revenue in greater detail in the later section of this report, on Phase III and the ECCP Review. **In the interim before Phase III (which we hope will set a higher limit on auctioning), the Government should examine the case for some form of windfall tax on power companies, where they are continuing to earn windfall profits and not investing them in low carbon generation.**

49. **The Government is also right to reject calls by the Clean Coal Task Group to promise new coal-fired power stations more favourable allocations, since this would be to go against the central point of the EU ETS, which is to put a price on carbon. Moreover, it should maintain subsidies for renewables alongside the pricing mechanism of the EU ETS. At the same time, given the power sector's own admission that policy uncertainty is impeding the flow of investment, the Government must provide clearer and perhaps more prescriptive guidance as to the kind of energy investments that the UK will need if it is to meet both its UK Climate Change Programme and energy strategy objectives. This must certainly be incorporated into the forthcoming Energy White Paper.**

50. Regarding the Government's treatment of the industrial sectors within the Scheme, we heard strong calls from power companies and environmental NGOs for the industrial sectors to have been given a degree of cutbacks from BAU projections in their allocations for Phase II, and for a percentage of their allocation to be auctioned. One of the main arguments made was that industry would soon have to start making cuts in its carbon emissions in order for the UK Climate Change Programme to remain viable. As AEP remarked of the industrial sectors' allocations, "A BAU approach is not sustainable if the UK is to achieve a 60% reduction in CO2 emissions by 2050",[62] while Scottish Power argued that if electricity generators were to bear all of the CO_2 reductions needed to meet

61 Ev 123

62 Ev 40

the trajectory set out in the 2003 Energy White Paper, the power sector would have to be carbon-free by 2020.[63]

51. EEF, meanwhile, argued strongly against such calls, on the grounds both that industry would find it very difficult to pass on resulting increases in costs, and that, in the short to medium term at least, the actual abatement potential in many industrial sectors was in fact very small. As they put it:

> for an energy intensive sector, such as steel, energy price has been a significant driver for very many years. The steel industry has improved its energy efficiency by 40 per cent over about a 20-year period. Unfortunately, we have today reached the point, I suppose, where the law of diminishing returns has stepped in. On today's technology there is very little more carbon efficiency, energy efficiency, that we can drive out of the system.[64]

To achieve significant further reductions of emissions, they suggested, would in many cases require a step change in technology; aside from being complex and costly, this could only yield savings in the long term.[65] Professor Grubb's view of this argument, however, was that, while these sectors had already paid attention to their energy costs, "Carbon costs will make them pay more attention. They have thought of a lot, but they have not thought of everything".[66] In the Carbon Trust's view, all sectors should receive some cutback in their allocations, albeit these should be differentiated by sector, according to their competitive exposure and ability to pass costs through.[67]

52. As to the economic impacts of the Scheme on industrial firms, representative bodies such as the TUC and EEF argued that the EU ETS was already having a real and detrimental effect on the competitiveness of UK firms.[68] NGOs and power companies again took a much more sceptical line. They pointed to the fact that not only were industrial firms being given allocations in line with BAU projections, they in fact ended 2005 with significant surpluses of allowances—ranging from 34% in the pulp and paper sector to 6% in the iron and steel sector.[69] While both EEF and CBI stressed that these surpluses might have been exaggerated by a downturn in production in 2005, UK Steel confirmed that the steel sector's Phase I allocation "allows us to produce the volume of steel that we expect to produce during the three-year period."[70] Indeed, the main argument made to us by manufacturing groups themselves was that the impact of the EU ETS on industrial firms was coming not directly from its sectoral caps on allowances but from its contribution to already rising energy prices. This reinforces the conclusion made, following

63 Ev 155

64 Q140 Mr Rodgers

65 Ev 51

66 Q227

67 *Allocation and competitiveness in the EU Emissions Trading Scheme*, Carbon Trust, pp 13-14

68 Q137, Q142

69 Carbon Trust presentation to the Environmental Audit Committee, 22 November 2006, p 27 (unpublished)

70 Q134

detailed analysis, by the Carbon Trust, that overall "competitiveness is not a serious concern in terms of the direct impact of Phase II EU ETS costs."[71]

53. One of the questions this raises is the extent to which the concerns expressed by industrial firms relate to wider economic circumstances, rather than their direct participation in the EU ETS. AEP, for instance, suggested that because of the weakness of the overall ETS cap, "the transfer of industry to developing countries will be driven by factors other than EU ETS, if it occurs at all."[72] Even if this is the case, however, as the Carbon Trust observed to us in passing, UK industry is generally more exposed to competition from outside the EU than its European competitors. This suggests the possibility that firms in the UK could potentially suffer a double disadvantage from inclusion in the Scheme: companies outside the EU might enjoy a cost advantage through not being affected by the EU ETS and its impact on energy prices, with companies in other EU states being less exposed to competition from them. Certainly, according to EEF the recent increases in energy costs, to which the EU ETS has contributed, have "contributed to the squeeze on profitability in manufacturing. If you look at the figures of net rates of return on capital employed, it is at its lowest level for 14 years."[73] For its part, the TUC was at pains to stress that in order successfully to deliver the transition towards a low carbon economy in the UK, without undermining competitiveness in the process, significant investment, workforce planning and skills issues will need to be addressed; and that to this end there should be greater co-ordination between Government, industry, and unions, including participation in the forthcoming Carbon Committee.[74] The view of the Carbon Trust was that, while concerns over competitiveness may be exaggerated in the short term, certain industrial sectors will be more vulnerable to competition than others—and that competitiveness could well become a significant issue in Phase III and beyond, as emissions caps begin to tighten on all sectors. (We discuss its proposals for protecting firms covered by the EU ETS in our section containing recommendations for Phase III.)

54. **The impact of the Scheme so far on UK industrial firms is largely indirect, in the form of higher energy costs. Most of the recent rises in energy prices have come from other factors; and to the extent that the EU ETS is responsible, Defra's case that this is to be welcomed, as it ensures energy users pay more of their carbon costs.[75] We recognise that for some firms this represents a genuine challenge. Overall, however, industrial sectors should themselves acknowledge the need to pay external costs. Even more importantly, they must accept that they will soon have to be given some cutbacks in ETS allocations, and make some real reductions in their emissions, in order to play their important role in the UK and EU Climate Change Programmes. In any case, even if they were to avoid future cutbacks, the cutbacks given to the power sector would then have to be proportionately bigger if we were still to achieve our emissions targets, which**

71 *Allocation and competitiveness in the EU Emissions Trading Scheme*, Carbon Trust, p 14

72 Ev 41

73 Q135

74 Q154

75 Ev 94

would in turn result in higher energy prices; thus they would still not be able to escape from the rising costs of carbon.

55. This does not necessarily mean that the concerns expressed by industrial groups—about increased vulnerability to international competition, and about a limited immediate potential for rapid carbon abatement—**are not genuine.** There would indeed appear to be an assumption, built into the design of the Scheme and shared by the Government, that progressively reducing an emissions cap will just as smoothly reduce the carbon intensiveness of the European economy, and thus begin to reduce absolute emissions without a reduction in economic activity. This in turn appears to depend on a willingness to believe that there a number of step changes in technology that lie just around the corner, and that they can be discovered and can transform the market in a short timescale, simply through increasing the costs of carbon-intensive activities. But in reality, even if such step changes are possible, the market may in practice be too "sticky" for them to achieve rapid and widespread take-up. **The Government should analyse and consult on the extent to which the economy needs greater support and guidance—in terms potentially of R&D investment, skills training, and trade agreements—in order both to realise the necessary carbon savings in the timescale required, and to do so without incurring the "carbon leakage" of firms relocating to countries with lesser carbon constraints.**

56. **Above all, however, where there are genuine concerns as to "carbon leakage", the emphasis of both Government and industrial lobbies should be firmly on developing trade agreement or protection measures, rather than seeking to water down the carbon caps on the UK and EU.**

The EU ETS and the UK Climate Change Programme

57. The UK currently has three main climate change targets, all for reductions from a baseline of 1990 emissions levels. One of these is an internationally agreed target, under the Kyoto Protocol, for the UK to reduce its greenhouse gas emissions by 12.5% by 2012. The other two are self-imposed targets which the current Government has set for the UK, one (adopted in 1997) to move towards a reduction of carbon dioxide emissions by 20% by 2010, the other (adopted in 2003) to reduce CO_2 emissions by 60% by 2050, with real progress by 2020. In addition, the Government has recently published a "UK Vision for Emissions Trading", which has called for the EU as a whole to formally adopt a target of reducing its greenhouse gas emissions by at least 60% by 2050, with an interim target of reducing them by 30% by 2020.[76]

58. The UK is currently on course comfortably to meet and exceed its Kyoto target for greenhouse gas (GHG) emissions. In 2004, GHG emissions were down by 15.1%, already in excess of the UK's Kyoto target, and latest Government projections are that this will

76 "Emissions Trading: UK Government Vision", Defra, DTI, & HM Treasury, 30 October 2006, http://www.hm-treasury.gov.uk/media/98D/4B/environment_emissionstrading301006.pdf, pp 2-3

extend to a 23-25% reduction by 2010. Progress on the other of the UK's short term targets, the 20% reduction in CO_2 only by 2010, has proved more difficult. In 2004, CO_2 emissions were approximately 6.3% down on 1990 levels, just over a quarter of the way to the target for 2010.[77] What is more, emissions were at their lowest back in 1999, when they stood some 8.1% lower than 1990 levels.[78] The Government's latest projections are, however, for CO_2 emissions to fall rapidly, so that by 2010 they will be some 16.2% below 1990 levels, short of the 20% target but a dramatic improvement from current levels.

59. The Government is relying heavily on Phase II of the EU ETS to achieve this progress. As the Secretary of State for Environment announced to the House on 29 June, the UK's Phase II NAP will impose a cap equal to a cutback of 8MtC on projected Business As Usual emissions. Furthermore, the latest issue of the DTI's "UK Energy and CO_2 Emissions Projections", published in July 2006, confirms that the Government is treating this stated cutback from BAU levels as though it will indeed reduce actual UK emissions by a full 8MtC by 2010.[79] This makes it by far the largest single carbon saving measure in the entire UK Climate Change Programme, as shown in Figure 2.

Figure 2 – Phase II of the EU ETS is the largest measure in the UK Climate Change Programme

UK CCP measure (Top 10 in order of size of reductions)	Estimated annual reduction in 2010 (MtC)
Phase II of the EU ETS	**8**
Climate Change Levy	***3.7[1]***
Climate Change Agreements	**2.9**
Renewables Obligation	**2.5**
Voluntary Agreement package (including reform of company car tax and graduated Vehicle Excise Duty)	**2.3**
Fuel duty escalator	**1.9[2]**
EEC 2002-11 (including Decent Homes)	**1.6**
Renewable Transport Fuel Obligation	**1.6[3]**
Carbon Trust	**1.1**
Wider transport measures	**0.8**

Notes: [1]*DTI incorporates the CCL into its model baseline projection of UK emissions, and does not publish a separate analysis of the effect of this individual policy measure. The estimated savings from the CCL given here (taken from an evaluation by Cambridge Econometrics) are higher than that included in DTI's projections because they include an assumption of an "announcement effect", supplementary to the actual impacts of the policy in practice, which is not replicated in the DTI model.*

[2] *The Government has compared the impact that the fuel duty escalator between 1993-99 had on demand to the impact on demand that simple revalorisations (rises in line with inflation) in fuel duty between 1993-99 would have had. Using this as a basis, it found that because of the ongoing higher fuel price due to the fuel duty escalator, demand for fuel in 2010 will be lower, and that this lower demand equates to a carbon saving of around 1.9MTC in 2010.*

[3]*Climate Change: The UK Programme 2006: This figure follows the internationally agreed methodology for allocating emissions to individual states, which prevents global double counting of emissions. As such it does not take into account the carbon emitted during the production of biofuels produced abroad but consumed in the UK. When this is taken into consideration the net global reduction in carbon dioxide emissions is 1MtC.*

Sources: *Climate Change: The UK Programme 2006*, Defra, March 2006; "UK Energy and CO_2 Emissions Projections", DTI, July 2006

77 "UK Emissions of Greenhouse Gases", Defra, 31 January 2007, http://www.defra.gov.uk/environment/statistics/globatmos/gagccukem.htm

78 *Our Energy Future – Creating a Low Carbon Economy*, DTI, Energy White Paper, February 2003, Cm 5761, p 25, footnote 6

79 See also Q302

60. The importance of the UK Phase II NAP to the Government's 2010 target is further underlined by breaking down projected progress towards that target, as follows. According to the DTI's "UK Energy and CO_2 Emissions Projections", published in July 2006:

- The 1990 baseline figure for UK CO_2 is 161.5MtC.
- The 2010 target figure (equating to a 20% reduction) is 129.2MtC.
- In 2004, UK carbon emissions stood at 152.5MtC, a reduction of 5.6% from 1990.[80]
- Emissions in 2010—in the absence of the new measures announced in the updated Climate Change Programme published in March 2006 (CCP 2006), and in the absence of the EU ETS—are projected to be 147.4MtC, a reduction of 8.7%.
- Adding in the new measures in CCP 2006 brings the projection down to 143.4MtC; but that is still only an 11.2% reduction from 1990 levels.
- Adding in the projected 8MtC saving from the UK's Phase II NAP brings the projection down further to 135.4MtC, a reduction of 16.2% from 1990.

In other words, **without the expected contribution of Phase II of the EU ETS, UK carbon emissions in 2010 are projected to be only just over halfway to the 20% target, a very significant shortfall. Treating Phase II as though it will deliver actual savings of 8MtC in full, and then treating this as though all 8 million tonnes of carbon reductions are going to take place within the UK, therefore makes a very significant difference to the credibility of this target.**

61. We have three main concerns about the Government's treatment of these projected carbon savings, which we explore in greater detail throughout the rest of this section. In brief, our main concerns are that: (i) the savings in practice might not be as large as announced; (ii) that they might not take place within the UK; and (iii) that the Government might be failing to make these points adequately clear – with risks to public perception of the need for further domestic actions to reduce CO_2 emissions within the UK.

Setting cutbacks from Business As Usual projections

62. The first issue to discuss is the Government's use of Business As Usual projections to generate savings cutbacks, and its treatment of these as though they will translate, in full, into reductions in actual emission levels. Giving evidence to us, WWF and RSPB were very critical of the way in which the Government had constructed the 8MtC figure:

80 Latest figures published by Defra have revised the emissions total for 2004 downwards, equating to a 6.3% reduction from 1990 levels. However, the accompanying Defra press release projects that CO_2 emissions will still be 11.2% down on 1990 levels in 2010 in the absence of the EU ETS, and 16.2% down when the EU ETS is included. "UK Emissions of Greenhouse Gases", Defra, 31 January 2007, http://www.defra.gov.uk/environment/statistics/globatmos/gagccukem.htm; "Greenhouse gas statistics show UK on track to double Kyoto target", Defra press release, 25/01, 31 January 2007

> ***Mr Caton:*** Can we look at UK emissions targets now. The Government says that Phase II of the EU ETS will save eight million tonnes of carbon a year from the UK, but that is calculated on the basis of business as usual projections if we did not have an emissions trading scheme. What are your views on using those sorts of projections rather than looking for absolute cuts?
>
> Mr Lanchberry: We should not. It is a bizarre way of reaching a target to do a business as usual projection, lop a little bit off it and then say you are trying to meet a target. If you are going to meet an emission reduction target, you need an absolute budget of emissions which decreases over time so that your budget in the end is exactly the same as the target you are trying to get to. It is absolutely bizarre to use a projection, except to inform you of how much you would have to do (what is the difference between what you might do and what you need to do), but you need to set allocations to the EU ETS on the basis of an ever reducing absolute budget for carbon. There is not another way to do it. Projections do not take you to your target.[81]

Similar concerns about the Government's use and public reference to reductions from BAU projections were expressed by the Sustainable Development Commission (SDC), when they gave evidence to us in July on the UK Climate Change Programme.[82]

63. One major concern with this reliance on BAU projections as the basis for the quantification of future carbon reductions is that, as the SDC described it, it means working "on the basis of shifting sands". Given that the UK's national cap in the EU ETS is set as a specific cutback from UK BAU emissions, it means that if the Government revises these BAU projections upwards (taking into account latest trends, not least on the actual effectiveness of its other carbon saving policies), the cap rises with it.

64. This is, indeed, exactly what happened when the UK set its National Allocation Plan for Phase II. When the Government launched its consultation on the size of the Phase II NAP in March 2006, and the extent of the cut it would make from BAU projections, it consulted on a range of cutbacks between 3MtC and 8MtC. When the Secretary of State announced the Phase II NAP in June, the cutback was revealed to be 8MtC, the upper end of this range. However, this still represented a smaller cut, in absolute terms, than the upper limit the Government had consulted on only three months before. This is because, following the consultation, the Government revised its projections of energy demand upwards, and with them its assessment of BAU emissions. Thus even though the cutback was still 8MtC, this was from a moving target; one which had moved upwards. The Secretary of State explained the matter thus, in his statement to the House on 29 June:

> In March, in our consultation on the draft National Allocation Plan, we set out a range of UK reductions of emissions during Phase 2, from 3 million tonnes of carbon

81 Q61

82 Oral evidence taken before the Environmental Audit Committee on 13 July 2006, HC (2005-06) 1452, Q206

> to 8 million tonnes. At the time of consultation this was equivalent to a cap of 234-252 million allowances a year, representing 234 - 252 million tonnes of CO_2.
>
> There have been important changes since we published the draft National Allocation Plan. Our projections for emissions in 2010 have risen by 3 million tonnes of carbon for the UK as a whole, and by 1.1 million tonnes of carbon for the installations covered by the EU Emissions Trading Scheme.
>
> In these circumstances, we believe it is essential to make the maximum effort consistent with the range on which we consulted, in other words reductions of 8 million tonnes of Carbon per year below business as usual, equivalent to a reduction of 29.3 Million tonnes CO_2. This is now, since the change in projections, equivalent to an annual total allocation of 238 million allowances to UK installations covered by the Scheme in Phase 1.[83]

65. WWF and RSPB argued that a better way for the Government to have calculated its National Allocation Plan would have been to do so on the basis of a target budget of carbon emissions for the UK in 2010, and the percentage contribution to it of those sectors covered by the EU ETS. In other words, given that the UK's target emission level for 2010 is 129MtC (a 20% reduction from 1990 levels), and given that the sectors covered by the EU ETS accounted for approximately 46% of UK carbon emissions at the start of the Scheme, a cutback in Phase II allowances in line with the 2010 target would give a cap of around 59.5MtC (roughly 46% of 129MtC). Converting this into carbon dioxide (1 tonne of carbon being equal to 3.67 tonnes of carbon dioxide) gives a total of 218.4 million tonnes of carbon dioxide ($MtCO_2$), or 218.4 million allowances. This would be a further reduction of over 18 million allowances per annum on top of the UK's announced Phase II NAP of 237 million per year, a lowering of the national cap by around another 8%.

66. **Calculating cutbacks in emissions caps with reference to Business As Usual projections lacks certainty and effectiveness. As the Government has implemented it, it means making a specific cutback from a moving target; and if BAU projections are revised upwards, so the cap—and the number of allowances to emit carbon—moves up with it. In other words, if emissions are projected to be worse than expected, then rather than the cap becoming tighter to redress this extra upward pressure on emissions, in effect it is made looser to make it easier for participating firms to accommodate it. Both within the UK and across the EU ETS, allocations ought to be set with reference to a declining budget of absolute carbon emissions.**

67. Whether calculated in this precise way or not, tightening the national cap in this direction would have been in keeping with the Government's stated objectives for Phase II. As featured in the 2006 UK Climate Change Programme, the primary objective for the Phase II NAP was that "the total quantity of allowances allocated for the second phase should be consistent with ensuring that the trading sector makes an appropriate contribution to the domestic goal to reduce carbon dioxide emissions by 20 per cent below

83 HC Deb, 29 June 2006, cols 396-7

1990 levels by 2010".[84] The usages "consistent with" and "appropriate contribution" were, of course, ambiguous, and did not commit the Government to using the Phase II NAP to make up whatever shortfall to the 20% target that was projected. But we might equally ask, given that the projected "carbon gap" in 2010 was bigger than previously expected, whether a tighter Phase II NAP might have been more appropriate.

68. **In addition to this lack of certainty, the practice of setting cutbacks from the moving target of BAU projections creates an obvious lack of transparency. When Defra announced last June that the UK's national cap for Phase II "is expected to deliver additional savings of 8 million tonnes of carbon each year, roughly equivalent to the emissions of 4 ½ million households",[85] the likelihood is that most people—including MPs, civil servants, and journalists—would have assumed that this meant it would reduce the UK's actual carbon emissions by 8 million tonnes a year. They would surely not have imagined that this same 8MtC was in practice worth less, in terms of real reductions in emissions, than only three months before! This underlines the need to set reductions from an absolute level of emissions, rather than a baseline of BAU projections which may vary significantly according to the differing assumptions that are fed into them.** Many people might equally not have realised that the emissions of some sectors and installations under the EU ETS were expected, and being allowed, to rise: the 8MtC cutback has been made entirely from the power sector's projected BAU emissions, all other sectors being given allocations to match their projected BAU needs. Thus if their BAU emissions are projected to rise over the period 2008-2012, they are being given extra permits to allow them to emit this amount in full.

Phase II will not reduce UK CO_2 emissions by the amount stated

69. A further concern about the Government's announcement of the Phase II NAP is the way in which it is incorporating the projected 8MtC savings into projections of progress against the target of a 20% reduction in the *UK*'s carbon emissions by 2010. **Because this is an emissions *trading* scheme, it is impossible to be sure that reducing the allocation of allowances given to UK installations will translate into emissions reductions within the UK. If all those UK installations which exceed their allocations in Phase II buy surplus ETS allowances on the market in order to make up their shortfall in allowances, it is theoretically possible the EU ETS might not be responsible for any emissions reductions within the UK at all.** The Government freely admits this point (while still not giving it great prominence; it did not feature in the Secretary of State's statement on the Phase II NAP, for instance, nor Defra's accompanying press release). The UK Climate Change Programme 2006, for example, stated:

> For the purpose of assessing the contribution of the EU emissions trading scheme to the Government's 2010 domestic carbon dioxide goal, the key issue is the total quantity of allowances to be allocated to UK installations. Installations in the EU emissions trading scheme can meet their obligations by purchasing allowances,

84 *Climate Change – The UK Programme 2006*, Defra, March 2006, Cm 6764, p51

85 "UK announces measures to move to low carbon economy", Defra press release, 291/06, 29 June 2006

> which might come from installations in other EU countries, and credits from the Kyoto Protocol project mechanisms, which will come from outside the UK and might come from reducing emissions of greenhouse gases other than carbon dioxide. This means that the emissions reductions expected from the second phase of the scheme and included in this Programme (see below), will not necessarily take place in the UK, nor will they necessarily be of carbon dioxide. Nevertheless, […] the Government will include allowances or project credits surrendered by installations in its assessment of the UK's progress towards the 2010 domestic carbon dioxide goal.[86]

At this point, we would simply observe on this that while we support the EU ETS, and look forward to its becoming more stringent and effective in Phase II and beyond, it is vital that this is not used as an excuse to reduce downward pressure on emissions within the UK, nor to forestall the introduction of new or tightening of increased domestic carbon reduction measures.

70. A natural concern which arises from this relates to the transparency of Government reporting of progress against its 2010 target. The Government is, of course, perfectly free to treat such international greenhouse gas reductions as counting towards its 2010 target: it is, after all, a domestic target which the Government has set itself, along with the rules applying to it. (In addition, when it comes to Kyoto targets, exactly this same use of international emissions reductions is allowed for under the Kyoto Protocol.) However, **by automatically ascribing all the savings projected to be generated by the UK's Phase II NAP as though they were being made within the UK, it is quite possible the Government might help to give a falsely reassuring picture of progress against its domestic CO_2 target within the UK.**

71. **Yet another concern here is that it is not just that the Government is prepared to count CO_2 reductions that take place in other countries against its domestic target for CO_2 reductions in the UK, but that it is prepared to count reductions of other greenhouse gases** (so-called "exotic gases")**, the global warming potential of which can be converted by mathematical formula into CO_2-equivalent, against its target for reducing emissions of carbon dioxide. Our concern here is not just regarding transparency, but that many of the projects to reduce exotic gases may be more dubious in terms of their transparency and impact on Business As Usual investment decisions and industrial processes.** (To clarify, we are certainly not questioning the contribution to global warming made by exotic gases, nor the principle of expressing them in terms of carbon dioxide-equivalent, but merely the credibility of some of the reduction projects which involve these gases.) Again, the Government is acting in line with the Kyoto Protocol, given that this is aimed at reducing GHG emissions in the round, not just CO_2; and given that it specifically allows for countries in the developed world to make up any shortfalls in their emissions targets by paying for emissions reduction projects in other countries. There are two such mechanisms under Kyoto—the Clean Development Mechanism (CDM), involving projects in the developing world, and the Joint Implementation (JI) mechanism, involving projects in the developed world—and Phase II

86 Cm 6764, p 51

of the EU ETS will allow installations to purchase a certain number of credits through them, to be redeemed in place of a proportion of their ETS allowances. Despite this being allowed both under Kyoto and under the ETS Directive, we have for some time heard compelling evidence to suggest that the worth of some of the projects financed under these Kyoto mechanisms should be subject to serious doubt.

72. Most of all, these concerns relate to those projects which are not aimed at reducing CO_2, but other "exotic gases" such as hydrofluorocarbons (HFCs). As RSPB and WWF argued in this inquiry, investing in measures to abate HFCs is currently the most popular form of CDM project, for the simple reason that it is cheap—given that not only is simple technology required, but the global warming potential of, for example, HFC-23 is 12,000 times that of CO_2, thus a small amount of money generates a very large payoff in terms of CO_2-equivalent credits. But not only does such investment not do anything to forestall the growth of carbon-intensive energy infrastructure in the developing world, there are suspicions that many of these HFC reduction projects are essentially bogus:

> Dr Allott: The economics of this are such that if you were to build a new HCFC refrigerant facility in a developing country and then fit a very cheap one million dollar abatement incinerator to destroy the HFC by-products from the HCFC production, the revenue from destroying the greenhouse gas pollution would be far greater than what you get from selling the product from the factory. In other words, you are building a carbon credit factory rather than a refrigerant factory, and you can just pour the refrigerant down the drain, which is, to our way of thinking, slightly perverse, to put it mildly.[87]

73. In giving evidence to us, **the Minister was keen to point out that the Government was limiting the use of CDM and JI credits within the UK NAP.[88] Indeed, their use will be limited, to 8% of the UK's total cap. However, this is still a significant amount, representing some 5.3MtC; and this figure has been worked out by the Government specifically because it corresponds to two-thirds of what it describes as "the effort in Phase II", or in other words the cutback of 8MtC from BAU projections.[89] To be clear, then, the Government is allowing for, and expecting, two-thirds of the headline carbon savings it has announced as resulting from Phase II to take place, not just outside the UK, but outside the EU—and probably in the form, not of carbon dioxide, but of carbon-equivalent greenhouse gases.**[90] In fact, the effects of such credits on UK installations will—indirectly—be even higher than this, because other Member States have

87 Q90

88 Qq290-1

89 HC Deb, 29 June 2006, cols 398

90 In arguing here that these savings will probably take place outside the EU, we are, first, recognising that the Clean Development Mechanism is designed for developing economies and does not therefore extend to projects within EU Member States. Second, we are assuming that the majority of these external credits will come from the CDM rather than the Joint Implementation mechanism, since emissions reductions in the developing world would tend to be cheaper to finance. Third, while the Joint Implementation mechanism is designed to cover projects in developed economies and thus might include projects within the EU, we are assuming that the majority of JI credits that are bought for use within the EU ETS will not come from projects within the EU – partly on the basis that if any large carbon emitters within the EU were able to reduce their emissions, they might more simply sell their surplus ETS allowances rather than sell credits through the JI.

set higher limits on the use of such credits within their National Allocation Plans. As the use of such credits within the EU ETS effectively works as a supplement to the number of allowances allocated within the Scheme, so the wider use of CDM and JI credits in other Member States will increase the availability, and decrease the price, of the ETS allowances which UK installations may buy to make up any shortfall in their allocations.

74. **It is essential, for transparency's sake, that in all its communications the Government from now on differentiates between reductions in emissions taking place *within the UK*, and reductions in emissions *funded by the UK*. Moreover, where it is referring specifically to reductions in carbon dioxide, it must differentiate between reductions in CO_2 and reductions in CO_2-equivalent. Where it refers to progress towards UK carbon reduction targets, it ought to give two separate figures: one referring to reductions solely of carbon dioxide and solely within the UK, and one including also the estimated reductions of GHG emissions financed abroad. Above all, it must ensure that whenever it publishes graphs depicting historic UK emissions and plotting their projected progress in future years, this always shows historic and projected emissions from the UK only, and never incorporates, in the same line, estimated reductions funded abroad.**

75. A final major concern must be that the cutback in emissions made by the UK's Phase II NAP will simply be less in reality than the 8MtC figure which the Government has widely publicised, never mind however many countries this is spread across or which greenhouse gases are taken to make it up. If UK-based firms, faced with a shortfall of allowances against their actual emissions, decide to cover these emissions by buying surplus ETS allowances from the market, then this is only likely to drive actual savings of carbon if there is an overall shortage of allowances across the EU ETS as a whole. (Such a shortage would be required to drive up the price of allowances high enough to incentivise fuel switching, increased energy efficiency, or a simple cutback in output.) While the Commission's decisions on the first 10 NAPs give grounds for optimism that there will be a genuine scarcity of allowances within Phase II, much will also depend on other factors, such as changes to gas prices; for instance, if gas prices drop, the market is likely spontaneously to shift from coal to gas, reducing emissions and with them the scarcity of allowances needed to cover them. (To reiterate, while this would be good in itself, in terms of reducing emissions in the short term, it would neither have much to do with the EU ETS, nor would it be stimulating long term investment in low carbon infrastructure to reduce emissions on a permanent basis—the ultimate aim of the Scheme.) Similarly, where UK installations meet a shortfall by buying CDM or JI credits (or ETS allowances which have become cheaper by the wide use of such credits within the Scheme), the extent to which this actually reduces the growth of global greenhouse gases depends very much on the quality of those individual CDM or JI projects.

76. Phase I ought to be a cautionary example in this respect.[91] Here, too, the Government announced that the UK's National Allocation Plan was imposing a reduction on Business

91 The UK Emissions Trading Scheme, introduced domestically by the Government in April 2002 and running until end 2006, ought to function as a further cautionary example. In the original UK Climate Change Programme, published

As Usual levels; for Phase I this was stated to be a cut of 8% or 4.6MtC. However, as we have seen, there is little or no evidence that Phase I is leading to any cutbacks in *actual* emissions at all, whether in the UK or elsewhere in the EU. Rather, it would seem that where UK-based firms have exceeded their allocations and bought allowances on the market, this has largely come from the general excess of allowances in Phase I; or in other words, they are simply buying "hot air". Certainly, as the Environment Agency told us, there is little evidence so far of any reductions in actual emissions from UK installations covered by the Scheme, and if anything the indications are of a retrograde movement.[92] Indeed, they said it was "pretty much the case" that the earliest we could really hope to see any actual reduction in emissions being driven by the scheme was Phase II.[93]

77. Despite this, the Government continues to make high profile, quantified announcements as to the UK carbon savings that are coming from Phase I. The recent Pre-Budget Report, for instance, published on 6 December 2006, stated:

> **7.17** EU ETS sets a limit on carbon emissions for 12,000 installations in major industrial sectors across the 25 EU Member States, including over 1,000 sites in the UK. Phase One began in January 2005 and will reduce carbon dioxide emissions in the UK by around 4.6 MtC (around 8 per cent) below the projected emissions of the installations covered by the Scheme by 2007.[94]

Indeed, the Minister explicitly endorsed these figures in his session with us:

> ***Chairman:*** So that I can be clear about the contribution that the first phase of the ETS has made, are you saying that has cut emissions by 4.6 million tonnes?
>
> Ian Pearson: Yes, we are.[95]

78. These 4.6MtC "savings" do not, however, appear anywhere in Government publications which calculate the UK's performance against the 2010 CO_2 target. The 2006 UK Climate Change Programme, published in March 2006, contains an eight paragraph section on the EU ETS, but completely omits any estimate of the contribution of Phase I to the 2010 target. Defra's "Synthesis of Climate Change Policy Evaluations", published a month later, merely states: "The EU Emissions Trading Scheme (EU ETS) is not covered because the effects in 2010 of Phase 1 are closely linked with current consideration of Phase 2."[96] By the time the DTI published its "UK Energy and CO_2 Emissions Projections", in July 2006, the Phase II NAP and projected cutback were known, but this document simply states the 8MtC projected savings from Phase II, and does not list any savings from Phase I at all. This would seem to suggest that the Government itself recognises that, while it did

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in 2000, this was projected to save "At least 2MtC" by 2010; revised projections in the updated CCP 2006 now forecast it will be responsible for savings of 0.3MtC.

92 Q2

93 Q4

94 *Investing in Britain's Potential: Building our long term future*, Pre-Budget 2006, HM Treasury, December 2006, Cm 6984, p 161

95 Q310

96 *Synthesis of Climate Change Policy Evaluations*, Defra, April 2006, www.defra.gov.uk

indeed impose a cap on UK installations at a level roughly 4.6MtC below BAU projections in Phase I, this shortfall is essentially being made up by buying hot air—i.e., the overall surplus of allowances allocated to industries in excess of need—and is not actually reducing CO_2 emissions at all.

79. **Another reason to treat the Government's statements as to the carbon savings to come from Phase II with caution is its record on reporting the savings to come from Phase I. Despite the lack of evidence that Phase I is driving any actual reductions in carbon emissions, the Government continues to make high profile statements that it is reducing emissions in the UK by some 4.6MtC a year. Given his personal and explicit endorsement of this figure before the Committee, the Minister must urgently tell us why, if this is the case, these "savings" of 4.6MtC do not feature anywhere in Government calculations of contributions to the 20% reduction target by 2010. If it is indeed the case that these "savings" are entirely notional—in other words, that they simply reflect a cutback from Business As Usual projections, and have not actually made any impact on UK emissions in reality—the Minister must explain why he failed to make this clear in his evidence to us; and the Government should immediately stop using this figure, and issue corrections to all official uses of it.**

Implications for the UK's CO_2 targets

80. As the updated CCP 2006 and other documents have shown, progress against the 2010 target has drifted since the original Climate Change Programme was published in 2000 (CCP 2000), with many of the projected savings from individual measures being revised downwards. Latest projections for carbon savings in 2010 depend for their respectability on the addition of extra measures not previously included; and even with these additional measures, reductions are projected to be 16.2%, just over three-quarters of the way to the target. As an illustration of just how much projected progress has drifted, both CCP 2000 and the 2003 Energy White Paper projected that the UK was on track to meet its domestic target for 2010 in full,[97] yet neither lists *any* projected reductions to come from the EU ETS by that date, despite this now being overwhelmingly the largest source of projected savings by 2010. As a further sign of this slippage, the Government originally phrased its 2010 target as being to reduce CO_2 by 20%, whereas more recently the official wording of this target, as reflected in the joint Public Service Agreement held by Defra, DTI, and DfT, has become to "move towards" a 20% reduction by 2010.

81. **Given how instrumental the Government's projections of savings from the EU ETS are to its target for reducing CO_2 emissions by 2010, and given the profound lack of certainty surrounding these projections, the Government's record in meeting—or even getting close to—its 2010 target must surely be in severe doubt. The Government must provide an updated assessment of progress towards the 2010 target at the earliest opportunity, and look to revise its climate change policies in this light. This experience also highlights the need for the forthcoming Climate Change Bill to set out statutory**

97 The 2000 Climate Change Programme projects that UK CO_2 emissions will be reduced by 19% by 2010, and that further unquantified measures may take this further so that the UK domestic target is reached.

arrangements for the Government to report to Parliament at least annually on national progress in reducing UK CO_2 emissions.

82. **Furthermore, considering the political capital that the Government has made out of its 2010 target, and the fact that it has featured as a repeated manifesto commitment, the Government has a democratic duty to be more transparent in its reporting of progress against this and future targets. As it stands, presentation of the UK's progress towards its carbon reduction targets is apt to mislead.** Aside from the need to differentiate between savings made within the UK and those financed abroad, the Government should also look at differentiating between the estimated impacts of the individual savings measures in the UK Climate Change Programme in themselves, and their contribution to the net change in reduction in emissions from the UK. There is every chance that repeated references to carbon savings of *x* million tonnes will lead to the impression that the UK's net emissions are currently going down by such amounts each year; when, in fact, in some recent years net CO_2 emissions have risen (for instance, 2000-2001 and 2002-2003).[98] It might heighten awareness of the imperative to take greater action if the Government were to make this clearer.

83. In answering a question on progress towards the 2010 target, the Minister vigorously denied that the Government's Climate Change Programme was failing, arguing that, although CO_2 emissions had risen slightly since 1997, "the situation would be significantly worse if it was not for the range of measures that we have introduced". More specifically, he argued that the UK has "substantially broken the link between growth and CO_2 emissions", given that while the economy has grown by 26% since 1997, carbon emissions have only risen by 2.3%.[99]

84. **While it is undoubtedly true that the carbon-intensity of economic growth in the UK has declined markedly in recent years, this is not on its own a guarantee of the success of the Government's Climate Change Programme, nor should it be a cause for complacency. It does not matter to atmospheric concentrations of carbon dioxide whether there has been a reduction in the carbon-intensity of economic production, but only whether absolute levels of carbon emissions are continuing to grow. The fact is that carbon emissions in the UK are higher now than they were in 1997, and while they are projected to be reduced by 2010, this reduction is set to fall some way short of the UK target. The Government must acknowledge that the UK Climate Change Programme is in some important respects failing to cut emissions in the UK as originally planned, implement the lessons as soon as possible, and share them widely with other governments.**

85. **The difficulties experienced in meeting the 2010 target, and the complications caused by allowing equivalent reductions in other greenhouse gases in other parts of the world to count against a domestic target for reducing CO_2, raise further concerns**

98 "UK Emissions of Greenhouse Gases", Defra, 31 January 2007, http://www.defra.gov.uk/environment/statistics/globatmos/gagccukem.htm

99 Q309

about the Government's target for reducing UK CO_2 by 60% by 2050. In his evidence to us, the Minister explicitly stated that the 2050 target might be partly met through financing projects in other countries:

> ***Chairman:*** […] For the sake of clarity, in the longer term looking at the 60 per cent target for 2050, do you envisage that a substantial proportion of that 60 per cent target could be met by buying reductions outside the UK? Would a third, for example, be acceptable?
>
> Ian Pearson: Some of that 60 per cent target will be achieved through the EU ETS and the EU ETS rules at the moment allow for trading. The 60 per cent target is not based on 60 per cent all taking place in the United Kingdom at the moment. This is something we will want to return to as part of the wider debate.[100]

What concerns us about this is that, as the Government has clearly outlined,[101] the 2050 target is based on an assumption that emissions from *all* countries in the developed world reduce their CO_2 emissions by 60%, with emissions from the developing world being allowed to grow but being strictly constrained. If these targets are to be met, it will mean developed economies making steep cuts in actual emissions, with developing economies making challenging cuts from BAU levels; in both cases, as soon as these targets begin to bite, it is unlikely that many countries will perform so much better than their targets that they will have large surpluses of carbon credits to sell. In other words, **it is vital that the Government does not rely on buying emissions reductions abroad to make up anything more than an insignificant amount of its 2050 target. In putting this target into statute as part of the Climate Change Bill, the Government must specify the minimum proportion of reductions that are to come in the form of CO_2 and take place within the UK.**

Recommendations for Phase III and the European Commission review

86. There are currently no concrete plans for the third phase of the Scheme. However, as Defra put it to us: "The EU ETS has no sunset clause, the existing legislation ensures that the EU ETS will continue to operate post-2012 and its key future role in delivering emissions reductions has been repeatedly confirmed in European Council Conclusions."[102] Indeed, the Commission has recently announced a European Climate Change Programme review aimed at improving the functioning and cost-effectiveness of the scheme post-2012. According to its terms of reference, this review will focus on issues such as the scope of the Scheme (including whether smaller emitters should be removed, and other sectors and

100 Q296

101 For instance, Cm 5761, p 25, footnote 5

102 Ev 98

gases included); increasing harmonisation (including whether there should be a single EU-wide cap instead of 25 separate NAPs); and arrangements for linking the EU ETS to other schemes (including measures for assessing and enhancing the effectiveness of CDM and JI projects). The Commission has invited submissions from interested parties, and the review is scheduled to report by 30 June 2007.

87. The UK Government is certainly playing a high profile role in seeking to drive forward this debate on how the EU ETS should be shaped post-2012. Most recently, the Environment Secretary has begun holding talks with stakeholders from business and environmental NGOs, with a view towards shaping what he has referred to as a UK manifesto for the EU ETS. This approach is spelt out in a document entitled "Emissions Trading: UK Government Vision", issued jointly by HM Treasury, Defra, and the DTI on 30 October 2006, which explicitly states that the Government "hopes to develop a widely shared UK approach to the future development of the scheme and to use that consensus to help take forward the debate with our EU partners."[103] To this end, the document establishes a number of the Government's preferred positions, and solicits the comments of UK stakeholders. Overall, there are perhaps two themes which stand out in this "Vision": that there should be definite EU-wide emissions reductions targets to establish long term certainty as to the levels of effort required; and that, in the interests of both efficiency and effectiveness, the Scheme ought to be expanded in scope and geographical coverage.

88. In this section, we set out recommendations to the Government in relation to Phase III, in terms both of its approach to those firms and sectors covered by the EU ETS within the UK, and its input into the ECCP review as to the shaping of Phase III overall. In doing so, we also give our responses, where appropriate, to the Government's call for comment on the positions outlined in its "Emissions Trading Vision" document.

Increasing the effectiveness of emissions caps

89. The central feature in determining the environmental effectiveness of the EU ETS is the aggregate cap it sets on emissions. There was near unanimity from the submissions we received that, in the first two Phases of the Scheme, the effectiveness of the caps have been undermined because Member States, in setting their own National Allocation Plans, have tended to favour their own economies in a competitive "race to the bottom". On this point, RSPB argued to us that the ETS Directive ought to be amended to become far more prescriptive in its requirements for Member States to draft National Allocation Plans so as to meet their Kyoto targets.[104] Several memos, however, notably the Environment Agency's, went further in arguing explicitly for the introduction of an EU-wide cap to take cap-setting out of the hands of individual governments.[105]

103 "Emissions Trading: UK Government Vision", Defra, DTI, & HM Treasury, 30 October 2006, http://www.hm-treasury.gov.uk/media/98D/4B/environment_emissionstrading301006.pdf, p 2

104 Ev 17

105 Ev 4

90. A number of submissions argued further that it is not just the size of the cap that is crucial but also its duration. Several submissions, in particular from power companies, argued that Phase III and other phases beyond that should be lengthened, to perhaps 15 to 20 years. This, it was argued, would incentivise investments in carbon abatement technologies by providing assurance as to the payback potential from such investments. The Commission itself, in its Communication setting out the terms of reference of the ECCP review, seems certainly to endorse this assessment of a problem to be addressed:

> Being in theory able to go back to the drawing board prior to each allocation period means that certainty can only be given for up to five years ahead. This is considered by many as too short to give sufficient predictability for investment decisions in sectors which are capital intensive and result in installations intended to be operated for decades. The Commission shares these views and regards further harmonisation of the cap-setting and allocation process, as well as increased predictability, as key strategic issues.[106]

91. There is a significant potential problem with extending the duration of future phases, however. As Climate Change Capital (CCC) outlined to us, "Investment likes certainty, yet democracy requires that politicians can change laws." Notably, if unforeseen factors meant that a cap was proving much less challenging than expected, or if new science indicated that steeper cuts were required than previously realised, then politicians would surely be pressed to intervene and change the terms of the cap, rather than wait out a number of years before the beginning of a new phase. Indeed, according to CCC, "Investors recognise that trading regimes that are not delivering policy objectives will be changed," meaning that simply extending the duration of a phase would not necessarily generate the desired long term certainty in carbon constraints and allowance prices. For this reason, "a mechanism needs to be developed that allows, on the one hand, investors to be given a framework for trading that could last into the long term, yet may also be altered if these objectives are not being met."[107] CCC have outlined such a mechanism, whereby Member States might use variable carbon taxes to supplement the price of carbon within the EU ETS if it dropped too low. Another such mechanism has been discussed by Ofgem, who suggested that if the carbon cost "turns out to be lower than expected, governments or other agencies can buy allowances from the market and retire them in order to cut emissions even further."[108] The Carbon Trust, however, have argued strongly against such "ex-post government interference", warning that this may increase uncertainty and thereby undermine the incentive for companies to invest in carbon abatement; and also that such actions might be challenged by legal action. The Carbon Trust's preferred alternative is for governments to auction a substantial proportion of allowances at a fixed, minimum price, which would in effect help to set a predictable minimum price for allowances throughout a phase.[109]

106 COM(2006)676

107 Ev 68

108 Ev 149

109 Q219

92. Several submissions argued that, in the absence of or opposed to very long running phases, the most important thing would be the adoption of a series of clear EU-wide targets indicating the carbon reductions pathway for Europe to follow over the long term, and to which future ETS caps will need to conform. On this point, the UK Government is being very active, suggesting in its "Emissions Trading Vision" that the EU ought to adopt targets of reducing its greenhouse gases by 30% (from 1990 levels) by 2020, and by at least 60% by 2050, in both cases "including domestic action and contributions made by EU companies and Member States to the efforts of developing countries, for example using the Clean Development Mechanism".

93. **In the interests of making the EU ETS more effective post-2012, the Government should argue for the introduction of a single EU-wide cap to replace the current system of National Allocation Plans. To complement this, it is vital that the EU adopts a series of future carbon-reduction targets. Future ETS caps should be reduced in line with these targets, according to a robust and transparent formula which should be specified in an amended ETS Directive. The Government should also evaluate a range of proposed mechanisms for effectively modifying caps and allowance prices within phases, in order to ensure that the Scheme is able to respond promptly to new circumstances, and to give further certainty as to the long term level and trend of carbon prices.**

94. **The Government should be commended for pressing the case for such EU-wide emissions targets for 2020 and 2050. However, given that it has described these as targets for "greenhouse gases" as a whole, and has explicitly referred to the use of Clean Development Mechanism credits as a means of meeting them, we are unsure as to the stringency and effectiveness of these proposals. In particular, we note that the proposed target for 2050 would appear much weaker than the Government's own target for the UK, which refers solely to carbon dioxide. The Government should rephrase these proposals, specifying the minimum amounts by which carbon dioxide should be reduced from within the EU itself.**

Improving the allocation of allowances

95. After the overall cap on allowances, the single most important feature to the effectiveness of the Scheme is the process of allocating allowances to separate economic sectors and the individual installations within them; this can affect both how many allowances a firm receives, and the cost it has to incur to acquire them. There are essentially three ways in which allowances can be allocated: grandfathering, by which a mixture of historic and projected BAU emissions are used to calculate an allocation; benchmarking, which calculates allocations according to an average or "best in class" installation; and auctioning, in which firms are not allocated allowances but must buy them upfront. There was a broad consensus in the evidence we received against grandfathering, the strongest argument being that it could create perverse incentives for installations to overstate their emissions or even actually emit more in order to benefit from higher free allocations in the future. Those who made this argument tended to see benchmarking as a means of eliminating this danger, although firms such as Shell and lobby groups such as EEF were

quick to point out the practical difficulties in trying to calculate and apply benchmarks across whole sectors containing varied individual installations.[110]

96. Strong arguments in favour of auctioning were made by organisations such as the Carbon Trust, Climate Change Capital, and environmental NGOs. Essentially, these arguments were that auctioning would: i) raise revenue which could subsidise low carbon research and development; ii) reduce the complications and administrative burden associated with calculating grandfathered or benchmarked allocations; and iii) by forcing companies to incur upfront costs for their allowances, gain the attention of company boards, and lead them to build the price of carbon into all their business plans. The views of firms subject to the Scheme were somewhat more reserved, however. While there was a broad acceptance of the principle of auctioning among power companies (with Climate Change Capital reporting to us that "the idea of full auctioning in Phase 3 is now gaining acceptance among the large utility companies"), several argued that it should be extended to all sectors. EEF, meanwhile, strongly argued that auctioning was unsuitable for industry, as it would merely impose an additional cost burden without yielding any additional environmental benefits.[111] Aside from this, concerns were expressed as to what the Treasury would do with the revenue, with Shell also making the point that unless the money were promptly recycled to contributing firms it would actually reduce the amount of capital they had available for making low carbon investments.[112]

97. For its part, as Defra's memo outlined, "The Government's long term goal is the full auctioning of allowances so the cost of carbon will be fully taken into account when making investment decisions."[113] On the point as to how the Treasury will use the revenue raised from auctioning allowances (including the 7% of Phase II allowances which the UK is auctioning), the Government continues to be somewhat reticent, however. While the Environment Secretary announced the creation of an Environmental Transformation Fund at the same time as announcing the UK's Phase II NAP, he did not explicitly say that it would be funded through auction revenue, nor what its actual objectives would be. The Minister for Climate Change was not able to clarify these points in his session with us.[114]

98. **The Government should be commended for auctioning a higher percentage of allowances in Phase II than any other Member State. Moreover, it is right to press for full auctioning of allowances throughout the Scheme in the future. In Phase III it should auction 100% of the power sector's allocation, as such firms should be able to pass these costs through without fear of international competition; indeed, this will stop them from making windfall profits. For exactly the same reasons, it should also press hard for the aviation sector**—whose sectoral allocation will be set at the EU rather than Member State level—**to be subject to a 100% auction across the EU from the time it**

110 Ev 52, Ev 164

111 EEF's argument was that international competition would not allow manufacturing and heavy industry to pass on the costs of allowances as could power companies, and that auctioning allowances would be unrelated to the carbon abatement potential of these firms.

112 Ev 163-4

113 Ev 94

114 Q259, Qq261-3

enters the Scheme. For all other sectors, the Government should introduce at least a significant proportion of auctioning, with a commitment to increasing this proportion in successive phases; and with the remainder of their allocations being made on the basis of best available benchmarks.

99. **The Government should carry out and publish detailed reviews of the best uses of auction revenue, based around the principle of speeding the development and take-up of new low carbon technologies, but also around the benefits gained by recycling revenues to businesses and individuals in the form of reductions in other taxes[115] – especially where this is with the explicit design of shifting consumption patterns to a more sustainable basis, for instance by reducing VAT and VED on low carbon cars.** There are dangers in not hypothecating the use of auction revenues in these ways, notably that it may be treated simply as a tax, both by contributing firms and the Treasury itself, with a growing resistance to it from the one and dependency on it to meet general spending commitments from the other. The latter would represent a serious missed opportunity, given that, as we have previously observed, investment in low carbon technologies is seriously inadequate.[116] **More specifically, with only a year to its scheduled commencement, the Government should urgently clarify the funding and objectives of the new Environmental Transformation Fund. Among other matters, this should feature detailed evaluations both of where its funding will be most effective, and of what the impacts of incurring these costs will be to contributing firms (including to their potential investment in new low carbon technology) and how this might best be mitigated.**

Streamlining and harmonising the running of the Scheme

100. A number of further points, relating to the efficiency of the Scheme as well as its effectiveness, concern the need for greater harmonisation. Clearly, the most significant case for greater harmonisation is that, already discussed, of replacing the 25 separate nationally-set caps with one EU-wide cap. However, there are several other aspects of the Scheme, currently subject, to one degree or another, to control by individual Member States, which can both affect the overall effectiveness of the Scheme and the relative competitiveness of different economies. For example, the CBI argued that the use of auctioning in the UK should not be out of step with other member states as this would increase competitive distortions, and pointed to the fact that Sweden, Germany and Finland had already declared that they would not be auctioning any allowances in Phase II. The CBI was also far from alone in expressing its concern that "the UK's 8% limit on the use of JI/CDM credits [in Phase II] is one of the strictest amongst the member states (compared with 10% in France/Italy, 12% in Germany, 20% in Sweden and 50% in Spain/Ireland)".[117] Scottish

115 Purely on the economic benefits of revenue recycling, we note with interest the conclusions of an extensive literature review by Professor Paul Ekins, in *Economic Growth and Environmental Sustainability* (London, 2000, pp 234-7), which found that recycling revenues in the form of reductions in other taxes had significant economic benefits over returning them in the form of lump-sum rebates.

116 For instance, Environmental Audit Committee, Sixth Report of Session 2005-06, *Keeping the Lights On: Nuclear, Renewables and Climate Change*, HC 584, para 141

117 Ev 126

Power drew out the implications of this discrepancy in CDM and JI limits in assessing that it will "encourage arbitrage of project credits by companies in other Member States where caps are much less restrictive, which could potentially allow foreign-owned generators to cross-subsidise their operations to the detriment of locally owned generators."[118]

101. **It is imperative that the Government presses not only for a single EU-wide cap, but for harmonisation of the way in which this is broken down into national and sectoral allocations. Chief amongst these priorities should be harmonisation of: i) the proportions of allocations to be auctioned; and ii) to be made up by CDM and JI credits. The Government should also engage stakeholders, within the UK and abroad, as to the potential benefits and practicalities of introducing EU-wide sectoral caps, which might automatically harmonise such aspects across the Scheme.**

102. In addition, several submissions stressed the need for implementation of the Scheme to be streamlined, for instance by omitting smaller emitters, for whom the administrative costs of compliance are disproportionately large. Not the least of these calls came from the Government itself. As Defra's memo outlined, "In 2005 approximately 60% of the installations in the UK emitted less than 5% of the UK's total emissions covered by the EU ETS. This raises questions about whether the associated regulatory burden is appropriate for these installations." In response, the Government has in the short term "scaled administrative charges and established tiered monitoring and reporting requirements to reduce the regulatory burden on these installations, and has suggested means to exclude some of the smallest emitters from Phase II." For the longer term, and to achieve more wholesale changes to the classification which currently captures installations within the Scheme, the Government has indicated that it is targeting changes to the ETS Directive through the ECCP review.[119]

103. This was not the only issue in which we received calls for implementation of the Scheme in the UK to be streamlined, however. The CBI, for instance, complained of firms being subject to the double regulation of multiple emissions reduction regimes. In particular, they argued that where firms are currently subject to both the EU ETS and the Climate Change Agreement (CCA) regime, they should be allowed to receive the 80% discount from the Climate Change Levy without being required to comply with the CCA. Similar concerns were also well expressed by Minesco who, looking forward to the likely introduction of the Energy Performance Commitment (EPC),[120] and to the potential therefore for the same firms to be dealing with EU ETS allowances, EPC allowances, CDM credits, and JI credits, concluded: "The net result is therefore that it is highly likely that they will have to manage positions in at least 4 flavours of carbon [i.e., types of carbon credits or

118 Ev 156

119 Ev 92

120 Defra is currently consulting on this proposal. As Defra defines this idea, the Energy Performance Commitment (EPC) is "a mandatory cap-and-trade proposal covering energy use emissions from large, non-energy-intensive organisations [….]The proposal is for an auction-based "cap-and-trade" programme, in which participants would be required to purchase allowances corresponding to their emissions from energy use (either at the auction or from each other) and then surrender them to a coordinator. Government would cap total energy use emissions by deciding on the number of allowances issued for auction." *Consultation on measures to reduce carbon emissions in the large non-energy intensive business and public sectors*, Defra, November 2006, pp 8-9, www.defra.gov.uk

allowances], and could simultaneously be long and short [in] carbon under different schemes. Apart from the risk management complexities this introduces, the potential confusion cannot be helpful in ensuring that a simple cost of carbon emerges against which to assess policies or in developing a clear […] communications message."[121]

104. **We welcome the Government's leadership on lessening the burdens faced by smaller emitters, not least because the Government is consulting on introducing the Energy Performance Commitment (EPC), a separate regime into which they will presumably be transferred; this suggests to us that they will not fully escape an emissions reduction regime, but that its administrative demands will be made proportionate to their capacity and impact on emissions. In addition, we sympathise with the concerns expressed as to the possible complications and administrative burdens experienced by firms which may find themselves subject to both the EU ETS and EPC, as well as the Climate Change Levy regime. Calls for such firms to be exempted from all but one regime, however, must be treated with a great deal of caution, considering the potential impact on both the finances and emissions not just of those firms in question, but of their competitors. We will investigate these issues in detail in a future consideration of the Climate Change Levy, and may also look in further detail at some point at the EPC.**

Protecting firms subject to the EU ETS from international competition

105. As discussed in a previous section, there was disagreement between industrial groups and others as to whether UK industrial firms would suffer significant competitive disadvantage from the first two phases of the Scheme. However, there was more consensus, comprising not just the manufacturing lobby but observers such as the Carbon Trust, that for at least certain sectors competitiveness would be a real concern in Phase III. The Carbon Trust have outlined three possible mechanisms which could help to protect such industries post-2012 from competition in other countries not subject to the same carbon constraints. One option would be to bypass governments and negotiate international sectoral agreements to incorporate the cost of carbon with firms themselves; such agreements would cover all the major competitors in a particular sector (for example, steel production) throughout the world. Another would be to use border-tax adjustments to compensate industry producing in regions with high CO_2 costs for these costs when exporting, with a symmetric tariff being applied to imports. A third option would be periodically to make ex-post adjustments to firms' allocations according to their relative performance in carbon-efficiency per unit of output.

106. As the Carbon Trust themselves admitted, none of these options is without its problems. Regarding the first option, Professor Grubb referred to the legal difficulties of forming a binding agreement with a sector of the global economy: "who legally is the private sector? Who can sign an agreement on behalf of the steel industry? Who can enforce it on the steel industry?"[122] As for the second option, while the Carbon Trust

121 Ev 148

122 Q234

appears confident it could be designed so as not to fall foul of World Trade Organisation rules, others, such as EEF, have pointed to this as a potential problem. The third option is less favoured by the Carbon Trust itself as it would complicate and weaken the system, and also require amendment to the ETS Directive. For their part, the two business interest groups we took evidence from had contrasting views on these proposals. The CBI recommended that the first two options should be explored. EEF, meanwhile, appeared to favour a proposal of their own by which sectors more vulnerable to international competition would be withdrawn from the EU ETS, and subject instead to an ex-post system financially to reward more and penalise less energy efficient firms.

107. **The Government should consult widely in the UK and abroad as to the benefits and practicality of the Carbon Trust's three proposals for protecting vulnerable industries against international competition from firms not subject to the EU ETS or equivalent carbon constraints. In view of the potential difficulties of two of these options, it appears that the use of a border tax adjustment might have the most potential; however, the Government must urgently clarify whether this would indeed pass WTO criteria.** We would caution against a proposal made by EEF, as this would appear to require the withdrawal of certain sectors from the Scheme. Moreover, in appearing to be based merely on the relative energy efficiency of a number of firms, it would seem to offer no guarantee of absolute reductions in carbon emissions, nor sufficient incentive pressure to innovate in order to find some.

Expanding the Scheme and linking it with others

108. The Government has expressed a very strong and high profile commitment to pushing for the EU ETS to be expanded. Expansion in this sense means covering more economic sectors and greenhouse gases, and linking or merging with other emissions trading mechanisms, including CDM/JI and other emissions trading schemes emerging in other countries. Notably, the Government has been in the vanguard of moves to include aviation within the Scheme; and has also taken the prominent step of calling, in a letter sent jointly in February 2006 by the then Secretaries of State for Transport, Environment, and Trade and Industry, for the Commission to consider the addition of "surface transport" (or in other words, road transport) in the ECCP review. The Government sums up the case for such expansion in its "Emissions Trading Vision":

> The more we can trade emissions reductions across international borders, and the more emissions that are covered, the more cost effective for all it will be to achieve challenging emissions reduction targets. […] Making the carbon market deeper, wider and more liquid will increase its effectiveness in delivering greater emission reductions, and do so at least cost.[123]

109. **While we would broadly welcome the Government's efforts to expand the EU ETS towards forming a global carbon market, we do so with some caution given the potential to weaken the Scheme by changing its terms. Our first concern is with the use**

123 *Emissions Trading: UK Government Vision*, p 2

within the Scheme of CDM and JI credits. As discussed in a previous section, there is plenty of evidence that much CDM investment is currently going into projects of dubious merit, concentrating on the abatement of exotic gases; not only will such investment do nothing to forestall the growth of carbon-intensive infrastructure in developing prosperity, but it will do little to improve their people's prosperity and quality of life. For this reason, WWF argued that the UK should only allow credits to be used within its Phase II NAP where these meet the Gold Standard, an "internationally recognised benchmark which sets important sustainable development criteria for emission reduction projects". **Limits on the use of such credits should not just be harmonised across the EU ETS, but the Government should also press for a qualitative limit to be imposed on the use of these credits, to ensure that they are funding genuinely additional emissions reductions, and that they make a contribution towards sustainable development.**

110. A further point here concerns the impact, on the carbon price within the EU ETS, of expanding its terms to take in credits from other schemes such as the CDM. There is a potential contradiction here in the Government's ambitions for emissions trading. This was well expressed by the Environment Agency, when they told us that they wanted

> to see greater clarity over the UK and EU objectives for the EU ETS. In the Government's recent Green Paper, *The Energy Challenge*, it reaffirmed its commitment to using the EU ETS to provide UK industry with a long term price signal to drive domestic investment in low carbon technology. At the same time, we are likely to see greater integration of global markets to improve their efficiency and bring down costs. It is difficult to see that both are possible without careful analysis of the supply of CDM credits relative to the EU cap. A scheme that allows unrestricted access to the CDM market will drive down allowance prices making it more attractive to buy allowances rather than achieve domestic emission reductions.[124]

111. **We are not sure about the Government's argument that expanding the EU ETS will necessarily "bring about emissions reductions at lower cost",**[125] especially given that Climate Change Capital told us that including the USA and Australia, for instance, would by driving up demand for allowances be the best way of ensuring a robust carbon price for the long term.[126] **The Government should clarify its own understanding of the range of carbon prices required to stimulate the necessary level of investments in carbon abatement within the EU ETS, and seek to form a consensus on this across the EU. Considerations of the terms on which other sectors, gases, and trading schemes could be linked or encompassed by the EU ETS could then be made with reference to the projected impacts on this model price.**

112. The most significant expansion in the scope of the Scheme already scheduled to take place in the short to medium term is the inclusion of aviation. In December 2006 the

124 Ev 4

125 *Emissions Trading: UK Government Vision*, p 3

126 Ev 68

European Commission issued a proposal to include CO_2 emissions from all intra-EU flights in the Scheme from 1 January 2011, to be expanded to encompass all flights arriving at or departing from EU airports from 1 January 2012. The Commission has announced that the total number of allowances allocated to the aviation sector will be set at the EU level (rather than by individual Member States), and capped at its average level of emissions in the years 2004-2006. In the initial period of 2011-12, a small proportion of airlines' allocations will be auctioned by Member States, but, as the Commission puts it, "the overwhelming majority will be issued for free on the basis of a harmonised efficiency benchmark reflecting each operator's historical share of traffic."[127] As for the terms under which aviation is included post-2012, including its allocations and the extent to which they are auctioned, the Commission says that this will be reviewed in the light of the current overall review of the Scheme. Regarding the non-CO_2 effects of aviation to global warming, the Commission has said it will put forward a proposal to address nitrogen oxide emissions by the end of 2008, although it has not given a date by which a resulting mechanism would take effect; nor has it proposed any measures to reflect the other non-CO_2 effects of aviation.

113. The Commission's proposal came too late in our inquiry for us to make a detailed assessment of its strengths or weaknesses, and its impact on aviation emissions and the EU ETS overall. However, we have extensively discussed aviation and its inclusion in the EU ETS in previous reports, most recently our study into *Reducing Carbon Emissions from Transport*, published in August 2006, and we draw on that work here.

114. In this inquiry we received only one memo from an airline, Virgin Atlantic. This stated that Virgin was lobbying hard for the inclusion of aviation to be on the basis of all flights arriving and leaving the EU, not just intra-EU flights. While on the hand this seems impressively disinterested (given that it would pull Virgin, a transatlantic carrier, into the Scheme), we note that the memo also talks of "the need to reach agreement with international partners on this" which may mean that restricting the scope to intra-EU flights in the interim "may present the most practicable solution."[128] The memo was bullish as to the potential for aviation to make fuel efficiency improvements, drawing our attention to Sir Richard Branson's pledge to invest around $3 billion in schemes to develop new renewable energy technologies, and stating in this context: "Whilst alternative aviation fuels remain some way off, their potential should not be overlooked."[129] We would certainly warmly support such investment in R&D, and would be interested in any breakthroughs. However, as we concluded in our recent report, we have profound doubts over the ultimate scope for the aviation industry radically to improve its carbon efficiency through technological advance, at the very least within the timescale meaningful in terms of averting dangerous climate change.

127 "Climate change: Commission proposes bringing air transport into EU Emissions Trading Scheme", European Commission press release, IP/06/1862, 20 December 2006

128 Ev 169

129 Ev 169

115. **While we support the principle of including aviation in the EU ETS, this will only be effective if the terms of its inclusion are such to constrain and ultimately reverse the rise in aviation emissions. However, we have severe doubts as to its effectiveness under current proposals. Notably, the impact on airfares, and hence demand for flying, is projected to be relatively minor.** WWF, for instance, has pointed to reports which suggest that under current proposals the Scheme would, by 2020, and depending on the distance covered, raise ticket prices by only €4.6 (£3.10) for a return short haul flight, ranging to only €39 (£26.25) for a long haul return.[130] **Meanwhile, a proportion of what increase in prices there will be is expected to lead to windfall profits for airlines, given that their initial allocation of allowances will be given to them almost entirely for free, and as they, like power companies, will be able to pass on the market value of their allowances to customers.** The IPPR, for example, has estimated that giving airlines free allocations could lead to their enjoying windfall profits of up to €4 billion (£2.7 billion), while WWF estimates it at €3.5 billion (£2.4 billion).[131] **Moreover, there are still no concrete proposals for reflecting the total contributions of aviation to global warming, considered in most estimates to be between two and four times that from CO_2 alone.**

116. **It is essential, therefore, that the terms of aviation's inclusion are considerably strengthened in Phase III. Notably, lessons should be learned from the way in which the power sector has earned windfall profits in Phase I; as airlines similarly should be able to pass these costs through without fear of international competition, so their allocations should be 100% auctioned. Not only will this lead to a more efficient allocation process and prevent them making windfall profits from the Scheme, it should also focus their attention more on the costs of carbon, and raise valuable revenue. The proportion of auction revenue corresponding to flights within the EU could be earmarked for spending on rail alternatives to short haul flying within Europe. As for the remaining revenues, relating to long haul journeys, the Government and the Commission should make comparative studies of the benefits of the different ways in which these can be used, including using them to fund reductions in other taxes. Equally, the Commission must not waver in pressing for all arrivals and departures, not just intra-EU flights, to be included in the Scheme. The Government must maintain its voluble campaign in support of this principle.**

117. **Even if the terms on which aviation is included under the Scheme are toughened in Phase III, we still have severe doubts that the Scheme itself will be responsible for any significant improvements in the carbon efficiency of the overall fleets of aircraft affected, given the costs and technological difficulties in doing so. Rather, the chief potential contributions of the EU ETS regarding aviation would appear to lie more in simply increasing the costs of emitting carbon within the Scheme.** This could have a direct effect on the aviation sector by increasing the costs to airlines and hence to

130 "Including aviation in the EU Emissions Trading Scheme – an estimate of the potential windfall profit", WWF, December 2006. Based on an exchange rate, as of 5 January 2007, of £0.673 to 1 Euro. *http://www.sussex.ac.uk/Units/currency/*

131 *Trading Up: Reforming the European Union's Emissions Trading Scheme*, IPPR, December 2006; http://www.wwf.org.uk/news/n_0000003311.asp. Based on an exchange rate, as of 5 January 2007, of £0.673 to 1 Euro. *http://www.sussex.ac.uk/Units/currency/*

passengers and freight distributors, thereby helping to dampen demand for flights. It could also have an effect on the rest of the Scheme through raising demand for and thus increasing the scarcity of allowances, thereby helping to maintain a predictably strong carbon price; this would help to incentivise long term low carbon investment in sectors where abatement is more feasible. **But this depends on there being a strong cap on aviation emissions. If the cap is too weak, then its impacts—on airfares and demand for flights, and on the wider price of allowances—may be equally undermined.**

118. **Under current proposals, the allocation given to the aviation sector will be capped at its average level of emissions in 2004-06. In discussions regarding the level of the cap set for aviation emissions in Phase III, it would not be a surprise if airlines argued strongly that the initial allocation should be updated, and set at a baseline taken from years closer to 2012. It is vital for the integrity of the cap on aviation, and with it the integrity of the Scheme as a whole, that the Commission resists such calls. Furthermore, the Commission should put in place a clear commitment to reducing—even if gradually—the allocation set aside for aviation from its initial level. It would risk fatally undermining the effectiveness of the EU ETS—both directly, and indirectly through provoking opposition from other sectors—if the overall cap set by the Scheme was reduced in each phase, but the sectoral cap given to aviation was allowed to rise or even simply stay the same.**

119. **However the terms of aviation's inclusion in the Scheme are reformed and strengthened, complementary measures will be needed and must be introduced or intensified, aimed at constraining the growth in air travel and reflecting its full external costs, including all its non-CO_2 contributions to global warming. In addition to the "upstream" focus of the EU ETS—that is, directly affecting the airlines—the Government, and other Member States, should continue and increase their focus on "downstream" measures, designed to affect private and business decisions as whether or not to fly. Moreover, the Government must work to progress the development of an EU-wide measure to tackle NOx emissions, and should also lead the way in developing measures that reflect the remaining non-CO_2 effects.**

120. **Finally, now the Commission has published its proposal on aviation, there is no excuse not to include the greenhouse gas emissions of EU flights within the proposed targets for EU emissions reductions to 2020 and 2050. The Government must clarify that its proposed EU targets include aviation emissions, and should also revisit its UK target for 2050 to include the emissions of all flights arriving at and departing UK airports.**

121. Regarding surface transport, although the Government has taken a very high profile stand within Europe on its inclusion, it has not revealed anything in the way of a concrete proposal. Neither the letter sent by the three Secretaries of State to the European Commission last February, nor the Minister for Climate Change when he appeared before us in December, offered any details as to the proposed basis on which surface transport

might be included.[132] From our considerations, however, and the evidence we received, it would appear most likely that it would be included on an "upstream" basis, meaning that the cap would be placed on fuel suppliers, rather than a "downstream" basis which, by placing emissions caps on individual car owners, might simply prove impractical. The consensus of evidence we considered was against such a move. One concern was over the ownership of emissions in such a scenario, it being wholly unclear how upstream fuel companies would be able to influence the behaviour of the downstream users. Another was over the impact it would have on allowance prices, given the likelihood that, in the short term at least, road transport would function as a large net buyer of emissions credits from other sectors, possibly raising prices considerably. Not only might this have adverse consequences for those industrial sectors within the Scheme and subject to international competition but, as WWF suggested, the fear of such a prospect might lead to fuel companies being given a weak cap.[133] Third, we heard concerns that the inclusion of road transport might lead to greater opposition from road transport industry and users against all other existing and mooted measures, such as fuel duty rises.

122. **As yet we have not been convinced by the case for the inclusion of surface transport within future phases of the Scheme. The emissions from this sector can more effectively be tackled through other measures, such as motoring taxes, road charging, and mandatory fuel efficiency agreements with car manufacturers. Moreover, in view of the practical difficulties involved, we believe that it is not just less preferable that surface transport is covered by the EU ETS but conceivably quite unlikely that it ever would be. There is a danger, then, in the Government's mooting it as a possibility, that it may function as a red herring, and confuse or retard debate on other means of reducing emissions from road transport. At the very least, the Government must finally publish some details of its proposal, and show how it might deal with these reservations.**

123. The final area of transport to which the EU ETS could be extended is shipping. **The maritime sector is responsible for 4% of the EU's CO_2 emissions.[134] Despite this, there is little discussion regarding the inclusion of European shipping, in stark contrast to other transport sectors.** This is in keeping with the findings of our recent study on transport emissions, which observed:

> There is no international agreement on how these emissions should be allocated to individual states. Thus they do not form part of any country's national inventories of emissions, and no Kyoto targets exist for them. This means that sometimes very significant sources of carbon emissions are being effectively ignored […. O]ur impression is that there may be insufficient attention, from both governments and NGOs, on this issue to generate the kind of pressure on the negotiating process

132 Qq 328-34

133 Ev 25

134 *Trading Up: Reforming the European Union's Emissions Trading Scheme*, IPPR, December 2006, p 28

overseen by the International Maritime Organization required to generate a timely solution.[135]

We have previously urged the Government to take the international lead in drawing attention to the problem of international maritime emissions, and, in advance of global agreements through the International Maritime Organization, to press the European Union to pursue an effective EU-wide strategy to tackle emissions from shipping using European ports. **We now urge the Government to explore with European partners the potential of including the maritime sector within a future phase of the EU ETS. As a first step, the Government should press the European Commission to commission a detailed study to quantify the emissions and assess the practicalities involved.**

Increasing transparency and accountability of the Scheme

124. To date, public reporting on the operation of the Scheme and its effects has been disjointed, and lacking in both parliamentary scrutiny and wider publicity. Notably, it is down to individual Member States to publish details of the annual allocations and verified emissions of their individual installations. While the European Commission does publish aggregate figures of allocations and actual emissions for each country, this is in the form of occasional press releases rather than an official and high-profile annual report. Regarding the more detailed figures for individual installations, the Commission website merely publishes 18 separate links to the national websites of 18 Member States, each of which provides this information solely in respect of its own installations.[136] Not only does this make it cumbersome to obtain detailed information from each country, not all Member States are included.

125. There *are* some mandatory requirements to produce annual reports under the Scheme, both for individual Member States and for the Commission itself. Under Article 21 of the ETS Directive each Member State is required to submit an annual report to the Commission on its "application of the Directive", paying "particular attention to the arrangements for the allocation of allowances, the operation of registries, the application of the monitoring and reporting guidelines, verification and issues relating to compliance with the Directive and on the fiscal treatment of allowances, if any."[137] Article 21 then requires the Commission to publish a compendium report on the application of the Directive, based on these national reports. The first of these was published in 2006 by the European Environment Agency,[138] and contains some interesting information comparing and summarising the approaches and challenges faced by different Member States on a number of issues, for instance, methods of verifying emissions records, and public access to monitoring reports. However, this report does not contain figures for allocations or

135 Environmental Audit Committee, Ninth Report of Session 2005-06, *Reducing Carbon Emissions from Transport*, HC 981-I, para 111

136 "National reports on verified emission and surrendered allowances", European Commission, http://ec.europa.eu/environment/climat/emission/citl_en.htm

137 Council Directive 2003/87/EC, Article 21.1

138 European Environment Agency, *Application of the Emissions Trading Directive by EU Member States*, 2006, http://reports.eea.europa.eu/technical_report_2006_2/en/technicalreport_2_2006.pdf

emissions; and might otherwise be described as being limited by its being based exclusively on a questionnaire sent to Member States.

126. **To aid public understanding of the workings and progress of the Scheme, accountability of individual firms, and parliamentary scrutiny of the roles of national governments and European institutions, there ought to be published a high-profile annual report of the EU ETS. This report should set out the allocations and actual verified emissions in that year, broken down both by Member States and by individual installations. In addition, and in much the same way as a departmental or commercial annual report, it should feature a commentary on important aspects of the Scheme's operation in that year.** This might conceivably build on and be added to the more limited annual report, required under Article 21 of the ETS Directive, and currently published by the European Environment Agency. It would offer a much enhanced opportunity for national parliaments, as well as the European Parliament, to scrutinise the performance of the Scheme, and to identify areas of weakness to be addressed. Above all, however, the most important thing is that detailed allocations and emissions figures for all participating states and installations should be published in the same, transparent and accessible, document.

Putting the EU ETS into perspective

127. **The EU ETS is already a hugely significant development in the global effort to tackle climate change. Although its record so far in actually driving carbon reductions is unproven, it is far and away the largest and most sophisticated mechanism potentially capable of capping international emissions; and, as the Commission's decisions on the Phase II NAPs show, it is moving slowly in the right direction. As such it is providing the inspiration and template for the construction of emissions trading schemes in other countries, and, as the Stern Review notes, has the potential to become the nucleus of a single global carbon market. In this respect, it must aim to become the "gold standard" for all other emissions trading schemes to emulate and be brought through market forces to comply with.**

128. **From pioneering the early UK Emissions Trading Scheme, to setting tougher National Allocation Plans than other Member States in the EU ETS, to leading the debate on expansion of the Scheme to take in other sectors and countries, the Government has consistently showed international leadership in helping to establish the Scheme and see it fulfil its potential. In its commissioning of the Stern Review, we also hope that it has played an ultimately significant role in persuading other countries, notably the United States, Canada, and Australia, to link to or join the Scheme as soon as practically possible.**

129. **At the same time, the contribution to be made by the EU ETS on its own ought to be kept in perspective. A strong theme to emerge from our inquiry was of the need to supplement the market mechanism of the EU ETS with other measures in order to**

ensure it delivers desired outcomes. Appeals for such extra measures came from a wide variety of groups: investors, economists, power companies, industrial lobbies, trade unions, and environmental NGOs. What united these appeals was the concern for certainty and security—over the long term price of carbon, over the fit between the EU ETS and energy policy, over protection from international competition not subject to similar carbon constraints, and over the R&D required to deliver step changes in low carbon technology. Uncertainty over all these issues is clearly impeding investment and the transition to a low carbon economy. The Government must look again at what it can do on its own, and what it can do to influence action at the EU level, to provide the certainty, assistance, and protection required to complement the bare workings of the Scheme itself.

130. **Overall, there are perhaps two main and related weaknesses in the Government's statements on emissions trading which it needs to recognise and resolve. The first is the contradiction between the Government's reliance on the EU ETS all by itself to set a price on carbon high enough to incentivise investment in low carbon infrastructure, and its enthusiasm for expanding the Scheme in order to lower the price (and resulting cost impacts on business and consumers), and thus make it more politically and economically acceptable.**

131. The second concerns the Government's ambition for relatively tough carbon reduction targets for the UK and EU, which themselves depend on global targets in which the whole of the developed world makes steep cuts, while the whole of the developing world has to meet challenging caps on its growth. The contradiction here lies in the Government's endorsement of and reliance on making up shortfalls in such national targets by buying carbon credits from other countries: if everyone thinks like this, then nobody will reduce any emissions, and nor will there be any surplus credits to buy. Exactly the same applies between different economic sectors; emissions trading cannot be thought of as an excuse for any one sector not to start reducing its actual level of emissions, with the thought that it can simply buy spare allowances from another sector. In order for there to be any spare allowances, all sectors are going to have to make strenuous efforts to push the decarbonisation of their processes as far as possible**. The Government must face up to the fact—and start challenging the British population, other governments, and global businesses to do likewise—that ultimately neither the UK, nor any country, nor any industry, can simply buy its way out of meeting its carbon commitments.**

132. **Above all, the Government must ensure that it is not investing a magical belief in emissions trading as a miracle cure for global warming – something which will , all by itself, necessarily reduce carbon emissions, necessarily lead to a step change in technology, and necessarily achieve this at low cost and without harming productivity. The most important role for emissions trading is to add a cost to carbon.** Certainly, it has the potential to do this more efficiently and ultimately at lower overall costs than alternative mechanisms such as a tax on carbon, but still in terms of helping to achieve emissions reductions its primary role is to put a price on carbon. **This can help to incentivise low carbon technological development and market transformation, but in**

doing so it is likely to raise costs and impinge on economic activities in some areas, even if the trading element will help to constrain these costs. Moreover, it cannot *guarantee* sufficient progress in the timescale required; and if new technologies cannot deliver enough reductions in time, then ultimately we will have to reduce the volume of our carbon-related activities. Emissions trading will not spare us from making difficult decisions and personal or collective sacrifices on the road towards meeting our global carbon reduction targets.

Formal minutes

Tuesday 20 February 2007

Members present:

Mr Tim Yeo, in the Chair

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

The Committee deliberated.

Draft Report (The EU Emissions Trading Scheme: Lessons for the future), proposed by the Chairman, brought up and read.

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

Paragraphs 1 to 132 read and agreed to.

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

Ordered, That the Appendices to the Minutes of Evidence taken before the Committee be reported to the House.

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

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

The Committee deliberated.

[Adjourned till Tuesday 27 February 2007 at 9.45am

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Tenth	Budget 2004 and Energy, HC 490 *(Reply, HC 1183)*
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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*)
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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 21 November 2006

Members present:

Mr Tim Yeo, in the Chair

Mr Martin Caton	Mr Nick Hurd
Colin Challen	Dr Desmond Turner
David Howarth	Joan Walley

Memorandum submitted by the Environment Agency

Summary

The EU ETS forms a central plank of UK climate change policy—it is expected to deliver reductions of 8MtC from electricity generators and major industrial processes by 2012. It is important that the scheme is strengthened for the future so that it delivers real emission reductions at least economic cost.

Key issues for the future development of the scheme are:

- Simplification and harmonisation, particularly of the way that allowances are distributed, so that there are clear and strong incentives to invest in low carbon technology, and to prevent distortions to the EU internal market.
- Consideration of whether more sectors should be included in order to maximise opportunities for significant, cost-effective carbon savings.
- Reducing the administrative burdens of the scheme particularly for smaller emitters and the exclusion for the smallest emitters where coverage by the scheme is disproportionate.
- The need for a long-term price signal and tighter caps in line in line with long-term EU and domestic emission reduction targets.

1. Introduction

The EU ETS is the UK's most significant climate change measure and the Government used the recent Green Paper setting out the first outputs of the Energy Review (July 2006) to reaffirm its commitment to the scheme beyond 2012. The European Commission is currently reviewing the EU ETS Directive, the outcomes of which will shape the third phase of the scheme starting in 2013.

The Environment Agency is the Competent Authority for the EU ETS in England and Wales. We also manage the Emissions Trading Registry and the new entrant reserve (NER) on behalf of the other UK regulators (SEPA, DoENI and DTI offshore). We were also responsible for production of installation-level allocations in the Phase II National Allocation Plan (NAP). We have focused our response on those questions that are most relevant to our experience and expertise.

2. Responses to Questions

2.1 *What are the key lessons to learn from Phase I of the Scheme?*

Implementation

Phase I was designed to be a learning period and 2005 was the first year of operation. Yet we have already demonstrated in the UK that the mechanics of the scheme are sound. The majority of UK operators (99.6%) submitted their verified emissions reports and surrendered the correct allowances within the deadlines or shortly thereafter.

Monitoring and reporting of CO_2 emissions by the operators has improved considerably compared to that enforced under previous regimes so that we now have far more accurate information about actual CO_2 emissions from UK installations. Better quality emissions data will feed into other statistics such as the UK's Greenhouse Gas Emissions Inventory and will inform future policy making.

Small emitters and transaction costs

For small emitters the costs of compliance are disproportionate relative to their level of emissions (or potential savings). Administration costs for small emitters are in the range 1–2 £s per tonne CO_2 emitted versus <1 pence per tonne for the largest emitters. Installations that emit less than 10kt of CO_2 per year, constituting 45% of all installations, account for less than 1% of emissions. The smallest emitters, many of whom are in the public sector, have limited ability to pass through costs the costs incurred.[1]

Achieving real reductions in emissions

The EU ETS is designed to deliver real emission reductions by providing a fiscal incentive for "fuel switching" and/or investment in low-carbon technology. Therefore any assessment of the success of the scheme should consider indicators of its environmental impact, eg emission reductions compared to business as usual, changes in fuel mix and the emergence of low-carbon technologies. With the scheme only operational for a year it is too early to see direct environmental results, but the currently low allowance price is unlikely to be sufficient to drive long-term changes in behaviour.

During the first year of the scheme, most Member States emitted less than their 2005 allocations. UK installations in the EU ETS emitted 27Mt (million tonnes) more CO_2 than the number of allowances issued to them—one of only five Member States in this situation. This suggests that most Member States have allocated allowances to industry above business as usual and provided them with a financial windfall. This excess of allowances in the market has devalued the allowance price. For Phase II, our indication, based on the published draft National Allocation Plans (NAPs), is that the same situation could be repeated. The European Commission has a vital role to play in scrutinising and approving the Phase II NAPs so that the caps lead to real scarcity of allowances. In this way, the allowance price will come to reflect more closely marginal abatement costs and thus provide a long term incentive to investors in emission reduction technologies.

Harmonisation of implementation

Compliance data for 2005 was released early by some Member States. This distorted and destabilised the allowance price as the market reacted to the early publication of data. The Environment Agency is leading an IMPEL funded project to harmonise implementation of the scheme across the EU since the integrity of the scheme relies upon consistent implementation and enforcement of penalties across all 25 member states. The European Commission has a crucial role to play in ensuring that this occurs.

2.2 *How likely is it that UK firms would successfully reduce emissions by at least 7MtC by 2012, in line with the proposed Phase II NAP?*

The overall "short" position in the UK in 2005 was mainly due to the Large Electricity Producers which were allocated fewer allowances than their business-as-usual projected emissions in Phase 1. High gas prices and a steady coal price led to increased coal use. The low relative carbon price (cf gas price) did nothing to reverse this trend. Consequently CO_2 emissions from coal-fired power stations were typically above expectation.

In Phase II the cut has again been borne by the Large Electricity Producers, which will be allocated based on a benchmark, whereas the rest of the industry sectors are allocated on "Business As Usual" projections.

The EU ETS is a market mechanism. In a perfect carbon market we would see reductions providing the cost of abatement is less than the allowance price. The allowance price depends on many factors including allocations in the rest of Europe and the extent to which Clean Development Mechanism (CDM) and Joint Initiative (JI) credits are used.

The current Phase II CO_2 allowances prices on the carbon markets do not suggest any incentive to reduce UK emissions. These prices are critically dependent upon the actions the European Commission take during the scrutiny of member States Phase II NAPs. However the global nature of climate change means that environmentally it does not matter where emission reductions are made.

2.3 *What have been the effects of the method chosen for allocating allowances in Phase I?*

In Phase I, allowances were allocated to incumbent UK installations using a "grandfathering" methodology ie based on their historical emissions and sectoral projections. This approach rewards inefficient practice and provides incentive to industry to provide inflated growth projections in order to secure extra allowances.

[1] Draft report—Costs of Compliance with the EU Emissions Trading Scheme, AEA Technology plc on behalf of the Environment Agency, April 2006.

We therefore support the move away from allocations based on sector projections towards sector benchmarking which rewards best practice within sectors. We see this as a stepping stone to full auctioning of allowances.

The LETS Update[2] project, which was led by the Environment Agency and involved other EU Competent Authorities, concluded that in Phase I, the preparation of NAPs by Member States and their scrutiny by the European Commission lacked transparency. This is particularly true for the use of growth rates in setting the overall, sectoral and installation level allocations. As we have seen, this has left the potential for the use of inflated growth rates, which is likely to be the single most important factor affecting the environmental integrity of the scheme and the level of competitive distortions between Member States. The study presents a template for Member States to use in the preparation of their NAPs, which facilitate greater transparency.

2.4 *Has the Government identified the correct proportion of allowances to be auctioned in Phase II? Should these be drawn solely from the power sector's allocation? What will be the effect of this auctioning on industry and the price of carbon?*

Auctioning adheres to the polluter pays principle and is part of establishing an efficient market. The Environment Agency believes that 100% auctioning should be a long term objective for the scheme. In Phase II Member States are allowed to auction a maximum of 10% of the allowances they will issue. In the UK, auctioning for Phase II has been set at 7%, which is a step in the right direction. The allowances to be auctioned will be taken from the Large Electricity Producers' allocation. This sector is relatively insulated from international competition and can pass on the cost of carbon to consumers.

Allowance price is not dependent upon the UK NAP alone but on the interaction of all Member State NAPs. Auctioning allowances as opposed to the current system of allocating free allowances adds a cost to industry. Analysis[3] has shown that the volume of allowances that would need to be auctioned in order for industry to be worse off in terms of profitability after the introduction of the EU ETS is significantly greater than the 10% limit achievable under Phase II. The Oxera report indicates auctioning of 50–70% of up to allowances can be achieved in some industry sectors without adversely affecting profitability. This result depends on the characteristics of the industry itself and the underlying carbon price assumed in the model. Beyond this there are options for recycling auction revenues to reduce any competitiveness effects.

2.5 *What have been the effects of Phase I so far on the competitiveness of (1) business in the UK, and (2) business across the EU?*

No comment.

2.6 *What are the key issues for Phase II in terms of ensuring that emissions reductions from EU states are not cancelled out by the transferring of industry to developing economies?*

Managing competitiveness is an important aspect of designing an effective emissions trading scheme. The objective is to impose tough, but achievable emission limits on industry sectors that will not damage the EU economy as a whole. We would like to see all sectors given less free allowances than projected business as usual emissions, but differentiate the cut back according to sector exposure.

A number of issues need to be considered in determining the level of a sector's exposure, particularly the potential for passing compliance costs or the consequential rises in electricity prices through to consumers. Sectors that are highly exposed to international competition will be less able to pass on these costs, which has implications for their bottom line. However, there needs to be careful analysis of where the cost threshold for different sectors lies. The demand for local production of materials; the costs of long-haul transport; institutional inertia; labour costs and the sensitivity of the sector to energy costs are all factors in determining at what point a sector will be forced to move beyond the EU borders to escape the costs imposed by the EU ETS. Detailed sectoral-level economic analysis is needed to understand these factors to inform the cap setting process.[4] It should be noted that the cost of carbon allowances makes up a relatively small proportion of the fuel price.

In Phase II of the scheme most countries have allowed operators to use allowances from the Kyoto project mechanisms to comply with their commitments under the EU ETS. The UK has set a limit on the use of project allowances of 8%. The project market is dominated by private investors and is, in part, being driven by demand for cheaper abatement options than those available within the EU. In this way the project mechanisms can act as a pressure valve for industry concerned about high compliance costs during the Phase II of the scheme.

[2] LIFE Environment Preparatory Project for the EU Emissions Trading Scheme Update, April 2006.

[3] Oxera report for the Environment Agency "What impact would auctioning allowances have on Phase II of the EU ETS", November 2005.

[4] The European Emissions Trading Scheme: Implications for Industrial Competitiveness, July 2004.

2.7 *How well are the EU ETS and the Clean Development Mechanism, working together? What needs to be done to better integrate these markets? Is the CDM funding the right projects?*

In 2005 there were 397Mt of carbon dioxide equivalent reductions generated by the CDM. More than 70% of this figure came from a few large HFC-23 reduction projects in China.[5] Currently, the EU ETS is providing some demand for these CDM allowances and this demand is likely to increase if there is a scarcity of allowances in Phase II of scheme.

The Environment Agency wants to see greater clarity over the UK and EU objectives for the EU ETS. In the Government's recent Green Paper, *The Energy Challenge*, it reaffirmed its commitment to using the EU ETS to provide UK industry with a long term price signal to drive domestic investment in low carbon technology. At the same time, we are likely to see greater integration of global markets to improve their efficiency and bring down costs. It is difficult to see that both are possible without careful analysis of the supply of CDM credits relative to the EU cap. A scheme that allows unrestricted access to the CDM market will drive down allowance prices making it more attractive to buy allowances rather than achieve domestic emission reductions.

2.8 *How should aviation be included within the EU ETS? What are the latest indications of when it will be included?*

The Environment Agency favours using the EU ETS to tackle emissions from aviation. However the inclusion of the aviation sector does pose some specific challenges. Our current understanding is that a separate, but linked scheme, would allow the sector to benefit from the efficiencies of a wider market yet keep distinct allowances that would be non-Kyoto compliant. We want to see the commercial carriers purchasing allowances via auction to prevent windfall profits at the expense of customers. This may also help to prevent distortions in the market.

The global warming impact of aviation is three times greater than that of the equivalent amount of ground level emissions of CO_2 therefore the wider climate change impacts of aviation must also be considered (RCEP, 2002). We want Government to consider the introduction of flanking mechanisms like emissions charges and fuel taxation to mitigate non-CO_2 climate impacts, rather than trying to deal with them within the EU emissions trading scheme.

2.9 *The Environment Secretary has said "we will support the Commission in its efforts to enforce tough caps". What exactly should the Government be doing to influence this?*

The Environment Agency considers that achieving a tough EU-level cap is the most important element in achieving its environmental benefits. Currently, it is difficult for Member States to be ambitious when the Directive allows for significant flexibility in implementation, for example on auctioning and new entrant rules, and the lack of penalties for Member States that over-allocate. The current system encourages Member States to allocate in line with concerns over their own competitiveness rather than truly focusing on areas where abatement could be achieved. We want to see the scheme moving as quickly as possible to 100% auctioning and a single EU cap.

It is important that the UK Government shows leadership in cap setting and implementation to demonstrate that it does not have to adversely affect the national economy. It should also lobby the Commission to carry out a detailed and thorough review of all 25 Member State NAPs and, where necessary, support their calls for Member States to strengthen their caps. Further, the UK can play an essential role in pushing forwards work to increased harmonisation in allocation methodology eg through the development of EU-harmonised benchmarks, and rules on new entrants and closures.

2.10 *How well integrated are the ETS and other EU climate change policies?*

The EU ETS is just one of a number of greenhouse gas emissions-related policies and measures at the EU level. It is fundamentally different from the majority of other policies that had been introduced previously in that it is a market based. Historically emissions reduction policies have been in the form of, for example, regulatory emissions limits, standards, tax incentives, subsidies or voluntary agreements. These generally allowed little or no flexibility in compliance.

The LETS Update Project[6] identified the policies that currently have the highest degree of interaction and overlap with the EU ETS are the:

- Integrated Pollution Prevention and Control (IPPC) Directive.
- Renewable Electricity (RES-E) Directive.
- Combined Heat and Power (CHP) Directive.
- Energy Performance of Buildings Directive (EPBD).

Waste treatment legislation and carbon capture and storage are relevant policies to consider in the future.

[5] Point Carbon, 28 February 2006.
[6] LIFE Environment Preparatory Project for the EU Emissions Trading Scheme Update, April 2006.

When any emissions policy is developed or revised, its interaction with the EU ETS should be considered and the areas where each policy takes priority must be clearly delineated. Critical areas of overlap should be considered comprehensively from the early stages of policy development. A structured approach should be used in this to ensure that interactions are properly considered at all points.

A decision needs to be made at the Commission level, in consultation with Member States, on how to balance different policy approaches in the case of interactions. This involves making decisions about the fundamental approach they wish to take in terms of emissions policy and the signals being sent out by the whole policy mix. For example, where IPPC requires standards to be met within a Member State versus the flexibility to achieve goals outside the EU indicated by CDM within EU ETS.

2.11 *What work needs to be done now to help design a third phase of the EU ETS? How can the experience of the EU ETS be used to help the design of a post-2012 Kyoto mechanism?*

The European Commission recently stated[7] that a high priority for the review of the EU ETS was to streamline the current ETS design through, for example, harmonisation of NAPs, new entrant reserves, closure and transfer rules.

The Environment Agency wants to see the following issues addressed by the European Commission's review:

- Movement towards a more harmonised allocation methodology. Allocation methodologies should incentivise investment in low carbon technology, and prevent distortions to the EU internal market. In Phase III, we favour increasing the level of allowances that are auctioned, and for those allowances allocated free, we favour establishing EU-wide benchmarks to reward best practice.
- Rules on new entrants and closures need to be simplified and harmonised across the EU to prevent competitive distortions between countries.
- Removing the smallest installations from the scheme will reduce the administrative burden on both operator and regulators.
- The EU ETS needs to provide a stronger and longer term price signal. Phases longer than five years should be considered beyond 2012. Alternatively the EU should consider setting an emissions pathway to signal the direction of caps with a mid to long term horizon. This would give more certainty to companies planning long-term investments.
- The EU ETS already covers emissions from a substantial proportion of the economy ($\geqslant$45% of the EU's total emissions). However, there are major sources including other industry, commercial, householder and transport sectors that remain outside the scheme. The LETS Update project carried out an assessment of a wide range of sectors to see whether it would be feasible to include them in a future phase of the scheme. It found that the inclusion of the aluminium, coal-mining and parts of the chemicals sector would be possible within the existing framework and would increase the current CO_2 equivalent coverage by an estimated 9% across the EU.

3. Conclusions

The strong performance of the UK economy over the past nine years has led to growing energy consumption. This growth combined with higher levels of electricity generation from coal has led to higher CO_2 emissions. Further we have an opportunity to drive investment into an estimated 25 GW of new generation capacity over the next few years towards lower carbon technology, providing the long-term price signals are in place. The EU ETS is currently "the only show in town" to set an EU-wide price on carbon. For this reason it is important that the scheme is strengthened for the future.

October 2006

[7] Peter Zapfel at an Environmental Finance Conference on EU Emissions Trading on 11 July 2006.

Witnesses: **Mr Jim Gray,** Head of Regulatory Development and Deputy Director of Environmental Protection, **Dr Martin Bigg,** Head of Industry Regulation, and **Ms Lesley Ormerod,** Policy Adviser, the Environment Agency, gave evidence.

Q1 Chairman: Good morning and welcome to actually our first evidence session on the EU ETS. Would you like to introduce yourselves to the members of the Committee and explain your positions.

Mr Gray: Thank you very much. I am Jim Gray. I am Head of Regulatory Development. I am also Deputy Director of Environmental Protection and I am representing the Director here today.

Dr Bigg: I am Martin Bigg. I am Head of Industry Regulation at the Environment Agency.

Ms Ormerod: I am Lesley Ormerod. I am Policy Adviser working on the EU Emissions Trading Scheme in Martin's team.

Q2 Chairman: Thank you very much. Would you like to say how you think the scheme is going so far?
Mr Gray: Maybe I could kick off with a few words and Lesley and Martin can join in. I think the first thing is to understand our role and then we could give you some views on how we think the scheme is progressing so far. You may know this, but it is worth running through it anyway. The Environment Agency is the competent authority for the ETS in England and Wales, so we have issued all of the carbon permits, we look after the monitoring, reporting and verification of the emissions and we also have enforcement powers, and we run the emissions trading registry which is the electronic registry which keeps track of the emission allowances. We do not determine the caps or the allocations; that role is done by government. Defra is the lead on the National Allocation Plan and DTI is the lead on the allocation methodology, so we work very closely with government and although Defra and DTI lead on the caps, in Phase II we are doing the calculations on the Phase II allocations for Defra and DTI to their methodology. In terms of how we think it has gone and what has been positive, we think the mechanics of the scheme are in place and working well. There were very tight implementation timescales which we met, so we think the mechanics of the scheme are working well, we think industry has engaged very well, we think the ETS functions as a market and the volume of trades has grown quite steadily. We recognise that it is the only cross-border trading scheme in the world and we think it has been successfully operating. The UK operators, as I said, have engaged well and they have also been very compliant. We have had 99.6% of operators submitting their verified emissions reports around allowances for last year and they did that in April, pretty much on time, so there is 99.6% compliance in the UK. In Europe, the compliance is probably not as good, but there is still pretty high compliance across Europe with something like 6.5 billion euros traded in 2005 across Europe, so I think in terms of the mechanics and the mechanisms of the scheme, from our perspective, that has worked pretty well. I think the real issue is about whether there is scarcity of emissions and how the market develops from here, so I think that would be our summary of how we see things, unless my colleagues want to add anything.
Dr Bigg: I think our concern at the moment is what is actually delivered in the short term and what it is capable of delivering in the long term. Clearly with the uncertainty and low price of the carbon, there has been little adjustment by industry and, unless there is a significant tightening up of allocations and tightening of the price, we will not see any significant change in the performance of industry. If anything, at the moment, with the expectations around the scheme and some of the changes and investments which have been made, we are actually seeing some movement to previous positions.

Q3 Chairman: Are there any documented cases where a particular business has reduced its emissions because it has been in the scheme?
Dr Bigg: In the short term, no. What we have seen is some companies, for example, Drax, has invested time and money in putting in facilities for the burning of biofuels. But, because of the low carbon price, at the moment I understand that has actually almost stopped because there is little incentive to burn fuels other than coal.
Mr Gray: I do not think it is clear whether we are really seeing any environmental benefits just yet, but I think it is early days and really this first phase of the scheme was about bedding the scheme in and getting the scheme running properly. What it does really bring out is that the scarcity of emissions and scarcity of allocations is really the crucial thing. The fall of the trading price, it is down to about nine euros at the moment per allowance and it was 30 euros in April and obviously the over-allocations in a number of Member States is all part of this, so I do not think we are seeing environmental improvement right now, but it is very early in the scheme of things right now.

Q4 Chairman: Given that is the case, are you really saying that Phase I, therefore, will have to be regarded, the whole of Phase I, as an experimental period and the earliest we can really hope to see any actual reduction in emissions being driven by the scheme is in Phase II?
Mr Gray: Yes, I think that is pretty much the case. I think we have to look towards Phase II and it is really down to the Commission now to apply pressure on the plans, the national allocation plans, across Member States for Phase II. I think that is pretty crucial. The Member States have all submitted their allocation plans for Phase II back in August and the Commission have got three months to scrutinise those, and I think whether we see the benefits largely relates to how the Commission approaches those Phase II national allocation plans.

Q5 Colin Challen: I am a bit disturbed really because we are putting a lot of faith into the ETS, with all our eggs practically in one basket and a huge amount of confidence, so I am just wondering if you can be a bit clearer about the short term and the long term. What is the long-term success—is it 10 years away or 15 years away? Stern is talking about doing things, very, very starkly in the Stern Report, in less than 10 years. Are we going to get real, positive results in that period?
Dr Bigg: Our concern is that with the initial returns from the national states for Phase II, unless the Commission takes a very strong line, we will see very little difference between Phase I and Phase II, so the only hope for significant change will be at Phase III where there are clear proposals to increase the scope of the trading scheme both in terms of number of pollutants and the installations covered. There is also the possibility, for example, of introducing aviation into Phase II, but, quite bluntly, unless there is a tightening up on the market and a real price for carbon, then the benefits that we are expecting will not be delivered.

Q6 Colin Challen: Do you detect an appetite for that change in the Commission?
Dr Bigg: Yes, we do, we have indications, but, unless we see something formal, we will continue to work with Defra in terms of putting pressure on the Commission to do something about it.
Mr Gray: There have been very strong statements from the EU Environment Commissioner about the scrutiny that the Commission will bring to bear on the Phase II allocation plans. What we are hearing at the moment is that most of the national allocation plans in the other Member States, on average, are about 3% tighter than the Phase I plans and I do not think 3% tighter will really, given the over-capacity across Europe in Phase I, deliver the kind of downward trajectory we need to see. This is a bit anecdotal, but the Commission are looking to and applying, or certainly we are aware anecdotally of some very strong pressure that the Commission are applying, to specific members and very robustly challenging their Phase II NAPs. To come back to your question, the whole thing turns on the Phase II NAP, otherwise it is beyond 2012 for Phase III.

Q7 Mr Hurd: Leaving aside the Commission for a time, can I press you a bit about the attitudes of other Member States. Meeting with one utility company recently, they said, "Do not underestimate how fragile the ETS is", because in this country we talk exactly the language of Martin Bigg about the need to tighten and toughen, "but in Germany", they said, "the language is completely different and it is about whether this scheme is going to be around in 2012". How fragile is the scheme, in your view?
Mr Gray: It is a good question.
Dr Bigg: Certainly the returns we see from individual countries suggest very different approaches being taken by them in terms of how much flexibility they are giving. Our concern is with what is being delivered and the allocation is being determined in very different ways in different states. One of the very strong points we are pushing for is transparency in the means of determining the allocations as well as robustness in those allocations and, ideally, a common approach in determining those allocations across Europe. One of the fundamental questions is how those allocations are made as well, whether it is grandfathering or auctioning, as that will have a dramatic effect on the price and how it is implemented.
Mr Gray: We are kind of hearing the same things as you have said about the German position, but there are other countries which are more passionate than that. The Netherlands, for instance, are a very strong advocate. In terms of your principal question about the fragility of the scheme, yes, the caps are the important thing, but we deal with the whole cross-section of implementers across Europe and we have a network. These are not the guys that are involved in the caps, but they are the guys that run the schemes in the various Member States. There is certainly a pretty strong commitment from the implementers, the EPAs, in the Member States to deliver this and have a strong implementation and enforcement, certainly at the level of the EPAs. I think the comments that you were making about Germany comes from the industrial push, I think, so in terms of how the scheme works, the mechanics and the cross-European trading, there is a pretty strong commitment from the European EPAs and the real test comes back to, as you say, the politics of the allocation plans.

Q8 Joan Walley: Could you just give a little bit more detail about the countries which see it the same way as we do, the sort of alliances that are building up in terms of where the tension is between perhaps the more industrialised countries, and the ones who are looking at it more from an environmental perspective. Who are we working closely with to share our approach to take it further forward?
Ms Ormerod: Through our work with other regulators, we work closely with the Netherlands, and the German regulators are involved in some work that we are doing. This is focusing on the practical implementation of the scheme rather than setting caps or NAPs, it is on the sort of nuts and bolts of implementing the scheme. There are 17 Member States we have worked with over the last 12 months, out of the 25, looking at the practical implementation issues and trying to come up with common approaches.
Mr Gray: We see a lot of enthusiasm at the EPA level. I think, to try and come back to your question about who is really committed at the political level, clearly the Netherlands are and they show a lot of leadership, but I was going to come back and maybe an easier way of answering that is saying who were the five Member States that had a deficit of allowances in 2005, the ones who, in order to get allowances, had under-allocated, and it is probably a pretty good test, I think. Those countries, and Lesley will check this, were the UK, Spain, Italy, Ireland and Austria, so I would suggest that if those were the countries that had a deficit of allowances, they are probably the ones that are most committed to the overall position, but that is partly speculation. It is encouraging that there were five, but then, as you say, there were quite a lot which had over-allocated.

Q9 Dr Turner: Looking at the outcome of the first year of Phase I, it would look as if the UK is the only major industrial country which has taken carbon abatement seriously in this scheme. It has cost us nearly 500 millions, but has it actually led to any more CO_2 abatement at all or has it simply subsidised the countries who have been over-allocated and who have not actually had to change their behaviour one little jot? Has it actually saved a single tonne of CO_2?
Mr Gray: Can I just check the figure you said there? You said—

Q10 Dr Turner: This is the figure I have in front of me and it may, or may not, be correct and I would be very grateful if you have more accurate figures.
Dr Bigg: We do not have any detailed figures of the impact on the UK economy of particular companies. I would simply draw a parallel, as my colleague Jim Gray has done, with other countries in

similar positions. We are aware that there are other countries, which have had significant surpluses and not had to recover, or trade to cover, their costs, but we would not have learnt from these perhaps shorter-term impacts on the market. If we get a robust market in place and real trading going on, then that impact will be more even across the European Union, which is where it comes back to the importance of setting the targets and having a real market.

Q11 Dr Turner: Can I come back to the purport of my main question which is: how many tonnes of CO_2 do you estimate were reduced over the whole area of the scheme in its first year of operation, if any?
Dr Bigg: We have seen no change in UK performance over the past year and, if anything, the market has been driven more by the price for fuel than by the cost of trading CO_2, so the answer is no, we have not been aware of any significant impact.

Q12 Dr Turner: So a scheme which is designed to reduce carbon emissions has, in its first year of operation, not had any effect?
Mr Gray: I am not clear. It is difficult for us to give a very black-and-white answer. Lesley here is pointing to something else which suggests there have been some reductions, but of course the cold winter and switching from gas to coal has an impact on this, so I could not give you a black-and-white answer on cause and effect, it is much more complicated than that, and I do not know if it has saved any or not. I know that winter coal switching is pretty significant because of gas issues over the winter, so I cannot give you a black-and-white answer, but I would just come back to that it has to be the longer gain and the number of nations trading in this. There is no other scheme in the world where one nation trades with another, let alone so many in a single European scheme, but it is early days and I cannot give you an answer in black-and-white terms as to whether it has saved anything or not.

Q13 Dr Turner: Can you explain what seems to be the outstanding mismatch between the UK's allocation and its actual emissions, 27 million tonnes of CO_2 more than the allocation?
Mr Gray: I think that was largely down to the fuel switching. Most of that was on the power generators.
Dr Bigg: It basically comes down to the price of fuel and, with the price of gas going up, a significant increase in the burning of coal and, therefore, higher coal consumption. That was a far bigger driver than the cost of buying additional CO_2 allowances.

Q14 Dr Turner: Given that I do not remember hearing any squeals of pain from the generators during this year, it is obvious that the actual effective price of carbon today is not enough to deter them from whatever they were doing and certainly not enough for them to invest in abatement. Therefore, what is your view on the price of carbon? It clearly is not sufficient. Can the ETS deliver a price of carbon that is (a) sufficient to influence investment and (b) high enough and stable or remotely stable and predictable? Can it do that?
Dr Bigg: The straight answer is yes, if there is a real market. I cannot come up with a particular figure as to what the price of carbon has to be, but clearly there has to be a real market where there is a shortage of supply in carbon and, therefore, real trading such that there is a realistic price and, therefore, that is taken into account in determining operating costs, ie, the cost of carbon is internalised in the processes. At the moment we do not see that happening, so, precisely as you say, it is not having a significant impact.

Q15 Dr Turner: How many years do you anticipate it will take to achieve that?
Mr Gray: These are precisely the questions to be asked and I congratulate you. These are exactly the questions and one would hope that the European Commission is asking those same questions in a very robust way. The whole thing turns on the scarcity and the allocations. My feeling, and this is a feeling, is that the current carbon price of nine euros an allowance is not going to drive reduction or abatement. Before it was apparent there was a market surplus, the April price of 30 euros per allowance or per tonne feels intuitively more like the kind of figure that would drive reduction because that is a figure that operators were entering almost blindly without knowing the market and whether there was a surplus or not. Operators did not know whether there was a surplus and they were trading on a commercial value basis and that market was around 30 euros a tonne. That intuitively feels about right. You will not get that kind of price without creating the scarcity. The UK Government can create a scarcity in the UK allowances, but you still need the whole European position to be a real market and to have the scarcity, I think.

Q16 Dr Turner: Is it not fair to say that this is a very complex and not very transparent process, somewhat open to abuse, and would it not be simpler and clearer if we achieved a fixed price for carbon by a carbon tax? Would it not be much more effective as an investment driver?
Mr Gray: That is for the Government as the Government issued that scheme, not the Environment Agency, but inherently, if it is working correctly, the theory is that trading should give you more reductions per euro than the tax will because the trading drives the reductions to the lowest cost and then you can get more reductions for unit cost, so the economic side of this, and I am not an economist, you would have to ask the Treasury or the Government, but the economic side of this really does say that trading would drive it.
Chairman: We will ask the Government about that.

Q17 Colin Challen: As you have said, the Environment Agency is responsible in Phase II for calculating the emissions from individual installations. I wonder if you could say a bit more

about how you would go about doing that. How do you obtain the information and how do you verify it?

Ms Ormerod: We effectively turn the handle on the calculations for the Phase II installation level allocations, but that is done following instructions and in accordance with allocation methodologies that are provided by Defra and DTI, so in that respect we are just really number-crunching, if you will. For the Phase II National Allocation Plan, unless there were significant changes in installation levels, then baseline data from Phase I was used and that is independently verified data. Effectively, Defra would set the overall cap for UK industry and then that is chopped up into the individual industry sectors.

Q18 Colin Challen: Who independently verifies it?

Ms Ormerod: Third-party verifiers. They are independent verification bodies.

Mr Gray: When the operators submit their returns to us, they have to be independently verified by a third-party verifier, so the returns we get, we do not go out and check every single return, but we do some sampling and auditing, so the returns we get for the emissions from the different installations come pre-verified, if you like, with independent verification engaged by the company. That was part of the design that Defra established, and we do some checks on that.

Ms Ormerod: It is the same for the baseline data that goes into the allocation calculations. That is also independently verified by private companies.

Q19 Colin Challen: On the independent verification, there are enough independent verifiers, are there, to do the whole job? In the building industry, for example, which is quite separate, I know, but we tend to find that there are not enough inspectors to do the job, so these independent verifiers are able to go and visit sites, to interview people and to take measurements themselves or do they rely on information which they may think is correct or not coming from certain installations?

Ms Ormerod: I am not so sure about doing measurements themselves, but they go in and they audit. It is fairly detailed auditing of operator records and how they have come up with their figures, so yes, and they have done it for Phase I.

Mr Gray: There are standards for the verifiers that we agree and the verifiers are accredited to the standards that we have agreed with, and I guess it is with UKAS.

Dr Bigg: There is a very detailed methodology spelled out by the Commission as to exactly how this is undertaken, which we have then added to in order to prescribe very clearly to operators and verifiers exactly what procedures they have to follow to ensure consistency across the UK.

Mr Gray: I would come back though to how we are calculating the Phase II UK cap. As Lesley has said, it is Defra's and DTI's methodology and I think it is a better methodology than for the Phase I because there is more benchmarking in it than previously.

Ms Ormerod: Most industry sectors have been allocated through the grandfathering methodology for Phase II which was the same approach taken in Phase I, although the large electricity producer sector has been benchmarked for Phase II and there has been some other new entrant benchmarking done for Phase II as well.

Mr Gray: So with Phase I people were given allocations virtually based on their history and business-as-usual projections and part of that is just standard practicality, whereas in Phase II the biggest emitters are the large power stations and we are looking more at what is achievable, what is the benchmark. Grandfathering favours people who have not done so well in the past and they are just allowed to carry that practice on, so we are doing more benchmarking for the big emitters. If you look on a risk basis or a targeted basis, it kind of makes sense to target the big emitters for the benchmarking exercise because the big emitters emit, I do not know what the figure is, the majority of the CO_2.

Dr Bigg: The large emitters contribute around 70% of CO_2. It is about 40 individual plants which make the biggest contribution, so clearly the biggest burden will fall on them and, proportionately, the biggest reduction will be coming from that sector. Just to stress one point, although the whole model for the allocation plan is clearly one for Defra, another aspect which Defra have built into their scheme is to provide more favourable allocations for CHP plants.

Q20 Colin Challen: That is interesting because I want to look at a couple of examples which I think will be pretty small fry in what you have just described in terms of the big emitters. In the first year of Phase I, the Queen Elizabeth Medical Centre emitted 7,500 tonnes more than it had been allocated and St James Hospital in Leeds, which I know very well, went over by 5,000 tonnes. The think-tank, Open Europe, has estimated that this cost in the first case of the Queen Elizabeth £90,000 and the Leeds Hospital £60,000. In Phase II, are you confident that public bodies, such as hospitals, will be more accurate in their assessments and that they will have an accurate, verified figure to work on?

Dr Bigg: We are similarly concerned about the proportionality of the impact of the EU ETS and a study we did identified that 45% of those in the UK in the EU ETS contributed less than 1% of emissions and the cost on them was proportionately significantly higher such that whereas the cost of the scheme to the larger operators may have been about a penny per tonne of CO_2, for the smaller operators it may well have been between £1 and £2 per tonne of CO_2. We have lobbied strongly with our Defra colleagues to exclude from the subsequent schemes or phases these smaller operators and we believe that Defra have similarly taken that message to the Commission. So we strongly support a far more proportionate approach to the delivery of the scheme and exclusion of the smaller players.

Q21 Colin Challen: That suggests that particularly the smaller players, and hospitals in particular with

all their other financial burdens, have found it difficult to mitigate their emissions and that they are just finding it too much of a burden.

Dr Bigg: Yes, the room for manoeuvre we see for the smaller operators is significantly less and the cost of doing so higher, so both from an administrative and an environmental viewpoint, we believe there is a very strong case for the smaller operators being excluded from the EU ETS.

Q22 Colin Challen: What sort of cumulative impact will that have on the integrity of the whole scheme if we start excluding small emitters?

Dr Bigg: If we exclude 45% of the smallest operators, that will knock out less than 1% of the emissions within the scheme, so the impact will be negligible.

Mr Gray: There is a very long tail. You have got the big power stations emitting a lot of CO_2 and then you have got this big, long tail of smaller emitters. You could take 45% out of the total installations and you have still got 99% of the CO_2.

Q23 Colin Challen: I realise it is small.

Mr Gray: We have made this loud and clear. I think the one thing I am going to take from this is to kind of go back and challenge my colleagues in the Agency who are doing the calculations with Defra and DTI. The kind of figures you are saying there of 90K for these smaller operators, that does not sit comfortably with us. It certainly does not sit comfortably with me, and I see my colleagues nod, but I am certainly happy to go back and look at that and check.

Q24 Colin Challen: It would send out the wrong signal, would it not? If we start saying that certain people would be excluded, especially at a time when the Government is considering even individual responsibilities for reducing carbon, and saying that these, by our standards, quite big emitters with 7,500 tonnes over their allocation, which sounds a lot to me just for one installation, whereas in the great scheme of things, it is not very big, the signal that that would send out surely is going to be rather more damaging?

Mr Gray: Sure, but I think our position is just practicability. Do you want to regulate half the number of people who discharge 99% or do you want to double the number that you regulate who discharge the other 1%? It is where do you draw the boundary. The Commission threshold is, I guess, I do not know if it is an arbitrary figure, Martin, but they just pick a threshold and everybody involved gets it.

Dr Bigg: Our aim at the end of the day is raising awareness and that clearly needs to be applied to everyone, but also proportionality in terms of response and of course the cost associated with it. Our concern is particularly about the environmental outcome and, as I touched upon earlier, if we have 40 sites which generate 70% of the emissions, then that is clear where we need to devote the maximum amount of effort to achieve the maximum number of gains. Conversely, climate change is an issue which applies to us all and, therefore, we need to ensure that we maintain that awareness without imposing unfair burdens on those individuals who have minimal impact.

Chairman: The question about whether your figures are different would be very helpful to us if the figures we have quoted here can be challenged. They came from an outside source to us, so if it appears that the estimate that we have been given is wrong, that would be useful to us to have.

Q25 Joan Walley: Could I just press you a little bit more on the methodology about the individual installations because, in response to Mr Challen's question about the emissions from the hospital and the medical centre that you have just referred to in Leeds, what I am not clear about is how you arrived at deciding which individual installations would be included in it. You could, for example, take a whole local authority or you could take the whole of the NHS estate and if you sort of put them all together, you might well find that you have a whole number of different installations which cumulatively together would emit a lot of emissions. I do not quite understand what the methodology is in determining which installations are included. Given that we are in the process of great regeneration at the moment and rebuilding so many, for example, hospital sites, I would secondly be interested to know what kinds of discussions there have been with the Treasury in terms of embedding the implications of this methodology in respect of PFI agreements and new building agreements.

Mr Gray: I would just say that we did not calculate the Phase I allocations, but it was Defra and DTI.

Ms Ormerod: In terms of coverage and determining which installations are in, the Directive which was transposed into the UK Regulations sets a threshold for inclusion in the scheme which is 20 megawatts for a combustion installation, which is what we would be talking about with a hospital. There are also some aggregation rules which mean that any smaller sources which add up to that 20 megawatts would bring the whole site in.

Q26 Joan Walley: So is it site-specific?

Ms Ormerod: It is on the basis of an individual installation. You do not aggregate emissions from different installations. You may aggregate sources on one site, one installation, because that one hospital might have a number of boilers and then the capacity of all of those boilers would be aggregated and if that came above the threshold, then that hospital site would be in, but you would not say for the whole local authority area—

Q27 Joan Walley: Why not?

Ms Ormerod: It is the way that the scheme rules are designed. It is set out in the legislation which defines—

Q28 Joan Walley: But what I want to get at is whether or not that design of the scheme is simply a matter of how Defra have constructed it and if it would be open to the UK, if there was a will to do it, to reconfigure it in a different way?

Mr Gray: I do not think so because the 20 megawatts is prescribed in the Directive, and 20 megawatts is quite a lot of power. It is not aggregated across a whole local authority, but it is within the fence of an installation.

Q29 Joan Walley: But should it be?
Dr Bigg: At the moment, we are delivering the EU Directive which has been transposed directly into UK Regulations and then we, as the regulatory authority, are delivering it as it stands. There is room for changes in the future and, as far as we understand at the moment, expectations in individual Member States are that there will be few changes next time round for Phase II, but an opportunity to add in other activities in Phase III. There is a case clearly for changing what is in it in terms of identifying other significant sources of greenhouse gases and, similarly, excluding small-scale activities, but it is a sizeable scheme with a lot of obligations. My colleague, Lesley, mentioned earlier the monitoring and reporting requirements and, if we are going down to smaller-scale activities, then the question is whether you need such onerous requirements, so in terms of ensuring awareness of carbon dioxide and addressing carbon dioxide or greenhouse gas emissions, it may well be that other schemes are more appropriate for small-scale activities than the EU ETS.
Mr Gray: We will check out, as you suggest, the position on the Queen Elizabeth Medical Centre and the St James Hospital in Leeds. If they have had to buy allowances and it cost that amount of money, the thing that strikes me about them is that if the allocations were made on a business-as-usual basis, then something has happened where they have either upped their production or done something, I guess, which was over and above maybe what they were doing before.
Dr Bigg: Perhaps another cost, of course, is the cost of third-party verification. That clearly is beyond our control and it is very much dependent on the commercial agreement between the hospital and the verifier they employ.

Q30 Joan Walley: Is that then not a matter for whatever the PFI arrangements are? I am assuming this is a PFI contract.
Dr Bigg: It is a matter for the operator, so in this particular case it may well be the PFI contractor.
Chairman: Well, if you could shed some light on that, that would be helpful anyway.

Q31 Mr Hurd: Can I take you back to the vital rule of the European Commission in tightening up the Phase II NAPs. What is your view on the degree to which these NAPs need to be cut and what is your view on the level of competence of, and confidence that, the Commission will actually achieve this?
Dr Bigg: To answer the second question first, we have a high level of confidence from the indications we have seen so far that the Commission are concerned about the national returns that they have received and are assessing at the moment, and we look forward to their response in the next month or so. As far as what the level should be—

Q32 Mr Hurd: Concern is one thing, but actual ability to do anything about it is another thing. What is your view about that?
Dr Bigg: I am afraid I cannot speak for the Commission, I can only reflect on the representations which, I understand, the UK has made to the Commission in terms of the importance and, I think, a recognition within the Commission that there are issues here that, unless it is tightened up, as we touched upon earlier, the scheme will not deliver. As to the precise price that will make a difference, I am afraid I have to refer back to what we were saying earlier, that we have seen indications in terms of what the market has done which means that companies have started taking action, but when the price dropped again, we saw, if anything, those actions being reversed.

Q33 Mr Hurd: But in terms of percentage reductions and allocations, I think you were talking before, Mr Gray, about Phase II may be 3% tighter than the first phase, if I understood you correctly, and that appears to be inadequate. What sort of percentage, in your view, is actually a more appropriate target to take us closer towards the 30 euro price which you suggested was actually—
Mr Gray: I could not give you a figure even now, but it strikes me though that if I were in the Commission, the way I would be looking at this, I would be saying, "The EU ETS covers 50% of the CO_2 emissions. What is our Kyoto target?", and I would be trying to align what they are looking for in Phase II NAPs with what they are trying to achieve through Kyoto. Intuitively, 3%, and the Fraunhofer Institute has been looking at these and that is their figure, intuitively it does not seem as though that will do the trick, but I do not know what the figure is and I think that is really in the hands of the Commission to look at what is the Kyoto target, what do they expect the sectors covered by the EU ETS to deliver and how do they then set that in a meaningful way. I do not have a feel for what that figure should be.

Q34 Mr Hurd: You talked in your memo about the need to move to a single EU-wide cap, if I remember correctly, as an important requirement of the scheme's future success. How realistic is that, do you think, in terms of national governments giving up their power effectively?
Mr Gray: I do not think that is particularly realistic.
Ms Ormerod: It is an option that the Commission will be considering in their review of the Directive. It is one of the options they have stated they will consider. In terms of political will across the Member States, I am not sure.
Dr Bigg: I think what we are looking for in the more short term is greater transparency in the methodologies that the various national governments use to derive their caps. If we can get transparency and a consistent approach, we are well on the way there.

Q35 Mr Hurd: Are we not kidding ourselves? Is not the whole problem of the first phase the lack of political will and we seem to be drifting into a second phase which shows exactly the same symptoms? Is it not actually time to be bold and actually say that it is the politicians who are the problem and this needs to be set independently across Europe?
Mr Gray: I would not like the Environment Agency to judge that. How the NAPs for Phase I landed the way they did, you say there is a lack of transparency and I think we would agree with that, but it is their own projections that countries have had for the growth, so there are a lot of underlying assumptions in arriving at those which are peculiar to Member States. I think it is outside our competence really to comment on those other than the obvious things we have said before, but I agree with you on the transparency and I think the reasons come down to some of the underlying assumptions about economic growth, et cetera, which they have said. Our National Allocation Plan for Phase I was very strongly scrutinised and challenged by the Commission and one can only presume they have done the same with the other Member States and why would they not? Maybe they did it on a proportionate basis. You can imagine they would spend more attention on the bigger nations than the smaller ones, but they certainly scrutinised us quite carefully and we felt that. You have to kind of assume that they did it for the others, but somehow or other things have changed and it never landed that way, but I would not like to speculate from the Environment Agency viewpoint as to what the remedies and issues are, but we do agree with some of the comments you have made.

Q36 Mr Hurd: Can I ask you about what you are seeing in terms of willingness to harmonise implementation of the scheme, which is what you are responsible for, and specifically on issues such as the number of allocations to be auctioned or the proportion of CDM and JI credits that can be used?
Ms Ormerod: Again they are issues that are government issues. They come within the national allocation plans rather than the practical implementation harmonisation work that we are doing, so again that is at government level.

Q37 Joan Walley: But you are leading it.
Ms Ormerod: Leading?

Q38 Joan Walley: You are leading the discussions to harmonise.
Ms Ormerod: On the practical implementation issues, not on issues like the proportion of CDM or JI credits or on the percentage of auctioning. That is at government level, that is not at our level.
Mr Gray: We are working with other regulators in Europe to ensure that we are monitoring CO_2 emissions the right way and using the verification rules. It is the practical compliance, how do we find compliance. We are not working at the level of, "What's the approach to auctioning or JI credits", that is the government level.
Dr Bigg: What we have stressed through our European contacts is the importance of having a common methodology and a transparent approach to the allocations, but, as Jim says, the key role we have got is to ensure that, once we have got those frameworks in place, they are delivered consistently across Europe.

Q39 Mr Hurd: How is the thinking evolving on the question of sanctions against Member States that are behind track, which is an implementation issue?
Dr Bigg: Again the Emissions Trading Scheme laid out very clear rules within which countries operate and the initial allocations, as I say, are according to those rules, but the only real role that I can talk about is when it comes to, once we have got the allocations, ensuring that individual installations comply with, and submit adequate returns against, those allocations. That is clearly our role as regulators, but everything else in terms of the national allocations and the methodology used is very much for national governments and we have no means of influencing that either as a national regulator or even as a group of European regulators.
Mr Gray: Your question about sanctions against Member States, it sounded to me as if you are asking whether the Commission would take sanctions against Member States. I guess you would ask the question, "Sanctions for what?" because if the Commission agreed the Phase I allocation plans and the members are working within that and, okay, there is then a surplus of allowances, I do not know, I do not have my finger on the pulse of what the Commission are thinking here, but I am struggling to think of what kind of sanctions they would take for that situation. Where they may consider sanctions is where Member States are not properly implementing it and again we are seeing that there is fairly good implementation at the EPA level. There is fairly reasonable compliance of companies across Europe, so whilst I do not know the answer to your question, I am not clear that there is a position that I easily see where the Commission would be certainly taking sanctions for Phase I. Phase II is their opportunity to get the right caps, but that would not be in the form of sanctions. I think where sanctions come in is where companies do not comply and then do not surrender their emissions or do not have their allocations allowances in the first place and then there has to be some kind of regulatory compliance action, and that is at a different level from what you have suggested.

Q40 Chairman: Well, one sanction might be to cut their National Allocation Plan.
Mr Gray: Yes, it could be exactly and it would be interesting to see what Phase II does.

Q41 Chairman: I understand your caution about not wanting to get into policy-making, but there is something inherently irrational about a country which has a Kyoto target of X% reduction and who sets their National Allocation Plan for a half of X. It seems to me to be that the sort of minimum target set under the National Allocation Plan should be one

that achieves the Kyoto target for that particular nation. Given that it covers almost half of all emissions, if they have a less-demanding target, they are making incredibly optimistic assumptions about the least-regulated part of the whole emission process.
Mr Gray: I do not think we can add, but we can only agree with that, I guess.

Q42 Chairman: Good! We are coming on to a very important part of the discussion, but the truth is that there would not need to be any national allocation plans if we had a system of 100% auction permits and an EU-wide target. All those problems would disappear.
Mr Gray: Yes, agreed.

Q43 David Howarth: Could I ask you to comment more on the idea of 100% auctioning because, in your memo, you say that should be a long-term aim of the scheme, to have 100% auctioning, but you also say that you could have a 50 to 70% reduction of permits without affecting profitability. I am a bit puzzled by what that means because, on the one side, if the scheme is not threatening the profitability of firms, how is it going to have any behavioural effect either at the level of the firms themselves or at the level of the barters where it encourages investment in the form of economic activities which do not use so many permits? Are you saying that we can have 50 to 70% of auctioning without any effect because that would be slightly pointless, would it not?
Dr Bigg: Can I turn it round the other way in terms of why auctioning in the first place? We have assessed the overall impact and are advocates of auctioning in comparison to grandfathering or benchmarking on the basis that, in principle, it actually internalises the cost of the pollution, in this case the carbon dioxide. So you start with everyone actually having to take account of the costs, but then using the funds raised from auctioning to support particular areas of new technology, cleaner technology which then will deliver additional benefits over and above the market. That is the most straightforward way of doing it and, in that way, you are actually returning the costs back to the emitters in one way or another. When it comes to any figure less than 100% there is a debate as to whom you advantage and disadvantage and the costs. Our concern is, as I say, that the environmental costs are taken into account and that there should not be additional distortions over and above those which bring environmental benefit. For international traders we would like to see the same approach applied to the same type of activity in each individual country so that, say, a steelworks is subjected to the same costs of carbon in whichever country it operates. Whether we go for a lower proportion of auctioning is, I think, a matter of debate and detail, but our principal concern is that the costs of carbon are actually built in to the costs of operating the particular installation.

Q44 David Howarth: Could I just press you on this 50 to 70% figure and how it was arrived at?
Ms Ormerod: The 50 to 70% figure came from some work that we commissioned which focused specifically on options around auctions in Phase II up to 10% and it is fair to say that the modelling that that was based on made some assumptions around things like the industry sectors, it is not across all industry sectors, but it was focused on specific industry sectors and a carbon price and things like that, so it was a very specific bit of work.

Q45 David Howarth: Do those assumptions include an assumption that firms are not able to adapt beyond a certain level of carbon price?
Ms Ormerod: Possibly.

Q46 David Howarth: The other thing which was interesting about your proposal is what to do with the non-auctioned bit, how to set benchmarks. I think you have put forward the principle that you should operate on the basis of the most efficient and the best in Europe, the kind of BATNEEC sort of technique. Just as a sort of matter of interest, how would the UK fare if that principle was put into operation? How near to the best-available technology, not entailing excessive costs, are we?
Dr Bigg: In terms of controlling emissions of CO_2 particularly?

Q47 David Howarth: Yes.
Dr Bigg: Well, if I can focus on the biggest emitters and the example there, our power stations, are relatively old, the technology is relatively old and we are in a process of retrofitting gas clean-up for sulphur dioxide to meet the requirements of the Large Combustion Plant Directive which further increases their carbon emissions. Therefore, to answer your question directly, relative to much of Europe, we do not perform perhaps at BAT or BATNEEC standards for carbon emissions.

Q48 David Howarth: I suppose it would be BAT or BATNEEC, would it not?
Dr Bigg: BAT under the IPPC Directive and BATNEEC under the previous legislation, so yes, particularly from the major power generators, we do have an issue there. In other industries, where perhaps one can say the costs are not so readily passed on to the consumer, there has been a bigger incentive to improve efficiency and we do see new technologies, new approaches and more efficient processes which do mean that the emissions are relatively smaller.
Mr Gray: Your question has made me think and listening to Lesley's and Martin's answers has just made me think that there is almost a hierarchy, is there not? It is a bit like the waste hierarchy which you will have come across many times. I guess you have got a hierarchy of grandfathering, benchmarking and auctioning and the further you can push the allocations up that hierarchy, I would think the better the market is going to work out like a true market, so there is almost a hierarchy there. The reason we are quoting figures like that is that there is practical element to all of this. We do not think we will get those kinds of figures, but there is

something that says that if you do take a position as an Environment Agency, you want to see things moving up that hierarchy and the further that happens, then the better the market you get and then the better the environmental outcomes, and that is probably the way we are looking at this. Maybe that is obvious to you, but it came to mind as you were asking the question.
David Howarth: That is helpful, thank you.

Q49 Chairman: Is it not the case at the moment that the longer we delay introducing a higher proportion of auctions, the more there is a kind of hidden incentive on installations not to take dramatic steps because, if they introduce low-carbon technology into their processes, they will actually be reducing their expected future allocations?
Dr Bigg: Yes.
Ms Ormerod: In Phase II, the baseline that was used to calculate those grandfather figures was not updated, so it did not take into account first year's emissions data, so there is not an incentive in that respect, but clearly if you are not going to update your baselines, then the information you are using to base your allocations on is becoming less and less realistic the further away you move from that, so there is an argument there that grandfathering is not the way to allocate in the future.

Q50 Chairman: It possibly disincentives people?
Ms Ormerod: Yes.

Q51 Colin Challen: Just moving on from the earlier questions about the disproportionate costs on smaller emitters, the proposed Energy Performance Commitment might be a place for some of these small emitters. Would that not also have a similar cost base for them and it is going to be equally expensive whichever scheme it is surely?
Mr Gray: We have seen some figures around for this because we think it would be a lighter touch. A big bit of the cost is the verification cost and we would probably see again on a proportionate basis a lighter-touch verification exercise. If the EPC came into a company that only had one site, then I think it would be cheaper to administer than the EU ETS, but not hugely so, but a bit cheaper, but if a company had 100 sites or 100 shops and it could spread some costs, then the cost per unit drops really quite dramatically, so I think for the bigger companies that may have small installations and would not come into the EU ETS, but they have a lot of them, a lot of supermarkets or whatever, probably the cost across them all per unit would be a lot, lot less than the compliance costs of the EU ETS.
Dr Bigg: The point I would emphasise though is that the EPC is out for consultation at the moment, so clearly there are a lot of things which are not known about the final scheme and what we have got in the consultation document are draft indications of the proposed costs, so until, realistically, the final proposal is put together, we do not know what the precise details would be, except that logically if you reduce the amount of work required and the standard of work required, then the costs will go down.

Q52 Colin Challen: It would not be less robust then?
Dr Bigg: Logic says that if you have more of a self-assessment process rather than third-party verification, then the level of robustness will be less.
Mr Gray: I think the level of robustness will clearly be less, but, because you are dealing with much smaller emitters that aggregate to a smaller amount, you can afford some proportionality in all of this, which is really the way I would look at this, so a small emitter, if there is a 10% error and you do not spot it, that 10% is minuscule compared to a coal power station and a 10% error, so it is just where you focus attention. Those figures that I had in mind before come from the consultation and they kind of show there should be costs going down very markedly if there are a lot of installations or shops or whatever that company has.
Dr Bigg: The figures we have from the consultation, just for information, are, we understand, for single sites about £7,000 and for multiple sites you are in the region of up to £30,000, whereas under the EU ETS for the smallest installation, it is, as I touched on earlier, about £11–12,000 plus the fees for your contractor, so there is a pretty significant step-up, but that reflects again the scale of activity and the environmental impact.
Mr Gray: And the 30,000 might be split across 100 sites or so, and so it could be quite cheap.

Q53 Joan Walley: The review that you were looking at in respect of the ETS Update Project, do you see, arising out of that, other sectors being included, like, for example, coal or aluminium?
Ms Ormerod: The LETS Project looked at specific industry sectors and did a feasibility study as to how realistic it was to include them and it made recommendations. Coal-mine methane was one recommendation that the LETS work came up with, so methane emissions from coalmines. I am not sure; I will have to double check.
Dr Bigg: There are other parts of the chemical industry.
Mr Gray: There is ceramics and there is aluminium as well. There are a few other high energy sectors.
Ms Ormerod: Nitrous oxide was one from nitric acid and adipic acid manufacture—it is fairly detailed—CO_2 and fluorocarbons from aluminium production and methane from coal mines.

Q54 Joan Walley: Wearing my constituency hat, I would be interested in the conclusions on that in respect of ceramics. In terms of coalmining and aluminium, how would it affect the price of coal?
Ms Ormerod: We did not look at that.
Mr Gray: It is a pretty incomplete picture. In terms of ceramics, we will privately talk to you about that. The big one is coal-mine methane, and may be somebody else does but I do not actually know how you would mitigate methane emissions from coal mines, and there seem to be a lot less coalmines around than there used to be. This is a study that has

made some recommendations and we feed this in, but personally, at the end of the day, whether this stuff makes a huge difference I am not sure.

Dr Bigg: The key point to emphasise is that if we are looking at greenhouse gases, with methane having 20 times the greenhouse gas potential compared to CO_2, then clearly significant sources of methane need to be considered, and mining is a significant source, alongside other activities including land-filling and agricultural sources.

Q55 Joan Walley: What would you say are the main recommendations that you have been making from this review and how well received have they been by the Commission?

Dr Bigg: The key recommendation is that the Commission looks broader than just CO_2. Other greenhouse gases and improvements can be achieved. It particularly mentions methane, any sources of methane (it does not matter where it comes from when it gets into the atmosphere), similarly N_2O, and even to look at where changing technologies may be resulting in increasing N_2O. For example, putting in gas clean-up on combustion processes actually can increase the emissions of N_2O rather than reducing other emissions. What we are keen to ensure is that there is a broad review of all potential greenhouse gas sources.

Ms Ormerod: I think the LETS Update Project seems to be have been fairly well received by the Commission, and they actually refer to it as a good source of information in the recent communication on the directive review, so I think they are taking those recommendations seriously.

Q56 Joan Walley: Finally, you commented earlier on that you were doing the monitoring, and the enforcement and the policy issues were a matter for government and Defra. Arising out of this review that you have done, it is not that you are detached from the policy-making arena, are you? What mechanism, do you feel, needs to be put in place whereby the work that you were doing on the implementation side could be more closely aligned with the policy agenda that is determining, through Defra and government, what comes out of the EU Commission?

Dr Bigg: The straight answer is that we are actually working very closely with Defra and DTI, both in the early stages on the implementation of the EU ETS but particularly now on its operation and, being the front-line regulators, our experiences that we are gaining through the operation of the scheme. So, through our regular dialogues with government departments and our formal representations back to them, our position is very clear, and they in turn, we can see, are reflecting that back to the Commission. But also, as we touched upon earlier, we are working with our European counterparts as European regulators similarly feeding through other Member States back to the Commission as well. We believe we have got to an effective working relationship influencing them on the workings of the scheme.

Mr Gray: Can I add a couple of things to that. The LETS Study that Lesley was talking about, we were essentially, I guess, a contractor, or partly a contractor. We know it was partially European funded and it was with some European partners and it was Commission funded, so we are almost doing it as, I guess, a contractor to some extent, and that is the domain of that. Of course the Commission has been positive about the kinds of things we have been saying. I agree with Martin entirely about the way we are working with government, but I go a step beyond that. I think for us the whole EU ETS experience over the last few years has for me been a role model in how the Environment Agency works with DEFRA. It has been one of the good kind of best practice examples, and two things, I think, are part of that. One is being clear about the roles—what is Defra's role and what is our role—but also Defra devolving as much as they can to delivery bodies. They still kept, I guess, the political things like the NAP and the European negotiations, all that kind of stuff, but devolving the delivery aspects to us. I am only saying what Martin said, but I am kind of strengthening it. I think this has been an area where we have worked immensely well with Defra and have been clear about what our respective role in all of this is.

Dr Bigg: Particularly, may I say, bearing in mind the timescale that we had to set up the scheme and operate it, the fact that, as far as we are concerned, it has actually worked well and delivered on a UK basis what the scheme was intended to, using the market to deliver environmental gains. We see it as a major success.

Q57 Chairman: We have covered all the ground that we hoped to, so thank you very much for coming in.

Dr Bigg: Thank you very much.

Supplementary memorandum submitted by the Environment Agency

The Environment Agency gave oral evidence to the Committee on Tuesday 21 November 2006. This supplementary evidence is provided further to the oral evidence session in response to questions raised by the Committee.

1. Costs Incurred by Public Bodies

The Committee asked for confirmation of the exceedances at St James Hospital, Leeds and Queens Medical Centre.

Defra allocated allowances for Phase I within the National Allocation Plan (NAP).

St James Hospital has an annual allocation of 1,263 allowances. Their 2005 verified emission figure was 6,263 tonnes CO_2, resulting in a shortfall of 5,000 tonnes.

Queen Elizabeth Medical Centre has an annual allocation of 28,001 allowances. Their verified emissions figure was 35,532 tonnes CO_2, resulting in a shortfall of 7,531 tonnes.

The Committee stated that the think-tank Open Europe estimated this cost in the first case of the Queen Elizabeth at £90,000 and the Leeds Hospital at £60,000.

There were winners and losers in Phase I. For 2005, 55% of installations had surplus allowances and 45% had a deficit.

St James Hospital and Queen Elizabeth Medical Centre are atypical examples. There were 107 hospitals in the scheme in 2005. 27 had surplus allowances and 73 had a deficit. Three had a surplus greater than 5,000 tonnes of CO_2. Three had a deficit greater than 5,000 tonnes CO_2.

There are two ways in which installations may cover a deficit. They may buy allowances from the market or they may borrow allowances from future years' allocations. If they borrow this can only be within the Phase. So they will either have to reduce emissions or eventually buy allowances to settle this debt by the end of 2008.

The Registry Regulations prevent us from commenting on what option was taken. Nor can we speculate on the price paid for allowances if they were bought.

Open Europe has used an allowance price of €12 in its calculation. This was the price of allowances just before the 2005 re-conciliation period. The allowance price fluctuated throughout the year from a low of €8 in February 2005 to a high of €30 in mid April 2006.

2. Impacts on the Ceramics Industry

The Committee asked for the conclusions of the LETS Update project in respect of ceramics.

The LETS Update project did not actually make any recommendations in respect of the ceramics industry.

Under the remit of the LETS Update project, work was carried out to look into the feasibility of inclusion of the most promising sectors and gases for expansion under the EUETS, as selected in an earlier scoping phase.

The project concluded, with the support of a Sustainability Appraisal, that:

- CO_2 from the production of ammonia, fertilisers and petrochemicals could be included in Phase III. Nitrous oxide from adipic and nitric acid plant could be included during Phase II and definitely by Phase III.
- Methane from active coal mines could be included in Phase III.
- CO_2 and perfluorocarbons from aluminium production could be included in Phase III.
- Hydroflurocarbons from refrigeration were not considered feasible for inclusion.

For each of the sectors and gases that were considered to have potential, possible route maps towards inclusion were developed, covering data collection, legislative processes, further assessment of competition issues, monitoring and reporting, administration and communication.

December 2006

Memorandum submitted by the Royal Society for the Protection of Birds

Introduction

1. The RSPB is Europe's largest wildlife charity with over one million members. We manage one of the largest conservation estates in the UK with 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.

2. We consider that human-induced climate change poses the biggest long-term threat to global biodiversity. A paper in *Nature* (Extinction risk from climate change, 8 January 2004) by a large group of scientists (including one from the RSPB) indicates that in sample regions covering about 20% of the Earth's land surface "15 to 37% of species in our sample of regions and taxa will be 'committed to extinction' as a result of mid-range climate warming scenarios for 2050."

3. To avoid such a catastrophe, the anthropogenic greenhouse gas emissions that cause climate change need to be cut hard and rapidly, with global emissions peaking within the next 10 years and then declining steeply. We therefore support policies and measures that do so and, in the UK, the largest single measure for reducing emissions is the EU Emissions Trading Scheme (EU ETS).

THE KEY LESSONS TO LEARN FROM PHASE I OF THE SCHEME

4. The first lesson to be learnt is that the EU Emissions Trading Directive is insufficiently prescriptive about how member states should undertake their allocations of allowances. The Directive merely states that national allocations should be consistent with achieving their Kyoto commitments. This vagueness has led to many states claiming that they will achieve their targets in sectors not covered by the EU ETS and justifying lax allocations on this basis. In fact, these claims have largely been fanciful and, in future, states should be required to allocate in direct proportion to their targets, or more, unless they can convincingly demonstrate that their targets will be met from emission reductions in other sectors.

5. Secondly, and most importantly, allocations should not be based on business-as usual emission projections, as is currently suggested in the Directive, because this is fundamentally inconsistent with attaining any absolute emission reduction target, such as the Kyoto targets or the UK government target of a 20% reduction in carbon dioxide emissions by 2010 from 1990 levels. National allocations of allowances should be based on an annual carbon budget, calculated from the national target. The UK's carbon dioxide budget for 2010 would, for example, be 129.2 MtC, 20% lower than the 1990 baseline figure of 161.5 MtC. Assuming equal effort in other sectors, the UK allocation for Phase II of the EU ETS would then be 46% of this at 59.5 MtC per year. (The EU ETS covers about 46% of UK carbon dioxide emissions.)

6. Another clear imperative is for the auctioning of all allowances. Not only would auctioning be fairer, rewarding early action and penalising laggards but it would avoid many of the difficulties encountered by governments in drawing up detailed allocation plans based on a free allocation. There would, for example, be no need for a new entrants reserve.

7. A disadvantage of Phase I is that it is for a very short period, only three years, and even the second period only runs for five years. This is a too short a period for firms to make big investment decisions about new plant which typically has to last twenty years or more. All that firms, certainly generators, are likely to do in short periods is to fuel switch between different types of existing plant. In future, some degree of assurance is needed to give companies confidence that the EU ETS will not only continue into the long terms but that caps on it will systematically reduce. This might be done simply by extending periods, although that might bring its own disadvantages, or simply by making clearer the governments minimum emission reduction trajectories.

8. Allocation methodologies and coverage need to the harmonised across the EU. In Phase I there have been considerable variation in which sectors member states have included in their allocation, let alone variation in allocation methodologies.

9. In Phase I, all member states have been afraid of placing their countries at a competitive disadvantage, and they have consequently overallocated allowances. Although competitive concerns have often been wildly exaggerated, they are real and need to be addressed if the EU ETS is to be environmentally effective. A bizarre side-effect of competitiveness concerns has been for many states to allocate so as to make the electricity generation sector bear all emission reductions, giving business-as-usual allocations to other sectors. This is preposterous in a system that is intended to reduce emissions.

10. Greater harmonisation and centralisation across the EU would help to allay concerns about competitiveness but the single biggest effect, by far, would be achieved by auctioning allowances.

THE LIKELIHOOD OF UK FIRMS REDUCING EMISSIONS IN LINE WITH THE PROPOSED PHASE II NATIONAL ALLOCATION PLAN

11. It should be simple and achievable at low cost and possibly net benefit. The emission reduction will be placed solely upon the electricity generators, where far larger emission cuts are feasible, with other sectors being allowed business-as-usual emission increases.

12. Although the Government claim that the Phase II NAP represents an 8MtC reduction over business as usual, in fact the cap is set only about 2 MtC per year (3.5%) below the Phase I cap. This is a small increment to cut from an inadequate initial allocation. The inadequacy of the current NAP is clearly demonstrated by the fact that generators still see it as economically viable to operate a significant proportion of coal-fired generation, to which they have been increasingly switching in recent years. An adequate cap on a market instrument such as the EU ETS would have driven fuel switching from coal back to gas or even to renewable energy, rather than the market responding to the relative decrease in the price of coal with respect to gas.

13. The inadequacy of the EU ETS allocation as a whole was also shown by the crash in allowance prices earlier this year, following the publication of emissions from the traded sector in 2005 which clearly demonstrated that actual emissions were much lower than those projected.

The Effects of the Method Chosen for Allocating Allowances in Phase I

14. There has been very little effect upon the behaviour of firms with installations included in the EU ETS. Outside of the generation sector, installations have been allocated allowances in line with business-as-usual projections and so the impact on both emissions and business economics has thus been zero, or nearly so. In the generation sector, the very small emission cuts over business-as-usual have been easily accommodated.

15. The fear of energy intensive industries that the pass-on costs of any increase in electricity prices have apparently not materialised, and would anyway have been swamped by the global increases in the costs of fossil fuels, most notably oil and gas.

Has the Government Identified the Correct Proportion of Allowances to be Auctioned in Phase II

16. In a situation where most of the allocation is free, auctioning a proportion of the allocation should have the beneficial effect of slightly tightening the cap and increasing the price of carbon. However, as most member states of the EU have opted either not to auction or to auction very little, the overall effect upon the price of carbon will be very limited.

17. It is hard to say what the correct proportion of allowances to be auctioned should be, other that it should clearly be maximised, but in that case the conclusion must be that total auctioning is best. A partial auction is an odd concept in that, at least in theory, allowances should either be auctioned or grandfathered (allocated free on the basis of historical emissions). The decision to allow a partial auction in the EU ETS was primarily political, a sop to the environmentalists and the economists (who argue that auctioning is both environmentally and economically more efficient) by the EU Parliament and Council during the passage of the Emissions Trading Directive.

The Effects of Phase I on the Competitiveness of Business in the UK, and Across the EU

18. As far as we are aware, there has been no effect on competitiveness in the UK and little or no effect should have been anticipated, given the largely business-as-usual allocation, including to the generation sector. As mentioned above, the energy intensive users feared that a quite small increase in the price of electricity could have large effects upon those that used a lot of electricity. In fact, analysis by the Carbon Trust showed that these fears were largely unjustified, except where the price increase was significant and that, anyway, many energy intensive users, such as the aluminium and cement industries, operate in circumstances where other factors are predominant. For example, the fact that cement is extremely bulky and used in large quantities tends to militate against its transport over large distances. For it to be commercially worthwhile to ship cement from, say, China or even Poland, the UK cost would have to be very high indeed.

19. Likewise, there appears to have been little or no effect on business competitiveness across the EU. On the contrary, in some countries, notably Germany, there has been a public outcry about the windfall profits made by generators from the free over-allocation of allowances.

Key Issues for Phase II—will Emissions Reductions from EU States be Cancelled Out by the Transferring of Industry to Developing Economies

20. It seems most unlikely that the overall level of the EU NAP will raise prices in the traded sector sufficiently to induce firms to relocate outside the EU. It is certainly true that firms have been transferring manufacturing, and increasingly services, overseas for about fifty years and will continue to do so as long as there remain countries where costs are far lower than ours. A significantly tighter cap, resulting in high carbon prices might accelerate this process in some sectors but is likely to have a marginal effect in most.

21. However, the Phase II cap is lax across Europe and, in those countries that have used it to reduce emissions, most have placed the emission reduction solely on electricity generators, allocating business-as-usual emission increases to all other sectors. Electricity generators generally lack overseas competition, certainly in the UK, and will not relocate. Any increases in the cost of electricity to energy intensive users will be small, because the emission reduction requirements on the generation sector are small, and so other firms will not relocate either.

22. Should one wish to do so, one way of encouraging relocation of EU industry to other countries is via the Clean Development Mechanism by assisting the growth of greener, cheaper industries abroad.

How Well are the EU ETS and the Clean Development Mechanism Working Together

23. This is currently unclear. Given the low cost of EU ETS allowances, the probability that costs will fall further, and the fact that businesses which have been allocated allowances in line with business-as-usual emission increases will not need to buy other forms of carbon credits, it seems unlikely that there will be much recourse to Certified Emission Reductions from the CDM. For firms to require credits from abroad there would need to be a shortage of EU allowances, and there is no such shortage.

24. The RSPB does not consider that CDM credits should be used in the EU ETS at all. We consider that the scheme should be employed to reduce emissions within the EU, not in other countries outside the EU.

The Inclusion of Aviation Within the ETS

25. The RSPB welcomed the Commission Communication on aviation and we served on the Commission's expert working group on aviation during its meetings earlier this year. We can provide further detailed information on this subject if requested.

26. In summary, we consider that emissions from EU aviation should be included in the EU ETS.

27. All flights to and from the EU should be included in the scheme both for maximum environmental benefit and to avoid competitive distortions. (Including, for example, only intra-EU flights would cover only about 40% of aviation emissions and would allow airlines that fly outside of the EU to subsidise intra-EU flights from them, whereas this option would not be open to those airlines operating solely within the EU.)

28. A multiplier should be employed to take account of the fact that aviation emissions have a significantly larger effect on the atmosphere than carbon dioxide emissions alone. (Three or four times higher according to the Intergovernmental Panel on Climate Change.)

29. The total number of allowances made available should be determined by the Commission, not left up to member states. All allowances should be auctioned.

30. There has been much debate about whether aviation emissions should be in a separate pool of allowances from the main EU ETS. In practice, this will inevitably have to be the case between 2008 and 2012. This is because EU ETS allowances are backed by member states' Kyoto allowances, so-called Assigned Amount Units (AAUs), but the Kyoto regime does not include aviation emissions and so no AAUs are issued to cover them. Consequently, ETS allowances for aviation emissions could not be backed by Kyoto AAUs and so aviation allowances would have to be kept in a separate pool, linked to the main pool of allowances via a gateway that allows no net flow. This situation may change after 2012 if Kyoto then includes aviation emissions but this does not look likely.

31. Given the urgent need to limit emissions from aviation, by far the fastest growing emission sector, we hope that aviation will be opted in to the EU ETS as soon as possible. This is also the Commission's aspiration. The Commission should issue a draft amendment to the Emissions Trading Directive within a few months but the amendment will be the subject of a co-decision between the EU Parliament and the Council, which is likely to take at least two years. Currently, the UK, France Germany and the Netherlands support opting aviation into the EU ETS and the Parliament's position is favourable. (Caroline Lucas MEP was rapporteur of the environment group that took the lead on drafting the Plenary Decision.) Opposition is mainly from countries towards the outer fringes of the EU, especially those with significant tourist industries.

Supporting the Commission in its Efforts to Enforce Tough Caps

32. We strongly support the Environment Secretary in the aim to support the Commission in its efforts to enforce tough caps, but we are less clear what the UK Government can really do about this because it is within the legal competence of the Commission. Although they will no doubt welcome the moral support of a major EU country, particularly as Commissioner Dimas has also said that the Commission wants to enforce tough caps too, it is hard to envisage the UK commenting adversely, let alone acting to oppose, poor caps or poor implementation by particular member states.

Integration of the ETS and other EU Climate Change Policies

33. The EU ETS is well integrated with other climate change policies in that it does not overlap significantly with them but, on the other hand, it could not be said that the EU has a comprehensive and balanced suite of policy instruments. Most have been developed of an *ad hoc* basis, like those in member states.

34. The origins of the EU ETS are in the attempt by the Commission to obtain agreement on an EU-wide carbon tax, which was intended to be far more comprehensive in the scope of the emission sources that it included. When the carbon tax failed to be approved the Commission moved towards a cap and trade system instead, again originally envisaged as being more comprehensive. Eventually, largely for administrative convenience, it was based largely on the Integrated Pollution Prevention and Control Directive, with which it overlaps considerably.

Designing a Third Phase of the EU ETS and a Post-2012 Kyoto Mechanism

35. See paragraphs 4 to 10 on what lessons can be learnt from Phase I of the EU ETS.

September 2006

Memorandum submitted by WWF-UK

Introduction

The EU Emissions Trading Scheme (ETS) is the most ambitious and innovative intergovernmental policy so far aimed at reducing greenhouse gas emissions. Europe is leading the way in implementing market based, cost-effective solutions to a global problem. The ETS covers nearly half of Europe's CO_2 emissions, so its success is vital to deliver the EU's targets under the Kyoto Protocol. A successful ETS could also form the cornerstone of future global agreements to fight climate change.

However, the system is being seriously undermined by a number of mistakes made during the first phase of the scheme (2005–07)—with the result that it is currently failing to deliver real cuts in greenhouse gas emissions. Governments must now learn from these mistakes and improve the system in the second (2008–12) and subsequent phases.

Phase II

Under the terms of the Directive Member States must submit their National Allocation Plans (NAPs) to the Commission for approval at least 18 months before the start of the new phase. However, so far only 13 (as of 2 October) including the UK's have been submitted. Once submitted the European Commission has three months to reject/accept/seek amendments to NAPs. Amendments to the phase II NAPs will not be accepted after 31 December 2006. The time left to influence the development of phase II NAPs is therefore now rather short.

The review

The European Commission is also about to commence a review of the scheme (due imminently) as required by Article 30 of the Directive, which will look to make changes to the scheme post 2012 (phase III and beyond) and will seek to:

1. analyse the functioning and design of the system;
2. evaluate the impact of expanding the ETS to other sectors and gases; and
3. understand the real impact of the ETS on competitiveness.

The review offers a key opportunity to put right the current failings of the scheme and to seek assurance that the ETS will continue to play a key role in future EU climate change policy.

1. Phase I—Lessons Learnt

Please see the enclosed WWF report "Carbon countdown" for a review of phase I.

In summary though, the key findings were:

— The collective cap across Europe was very weak. This was further corroborated when the emissions data for 2005 for the ETS sectors was released. In Europe overall CO_2 emissions from industry were 44 million tonnes below permitted levels under the scheme indicating that there had been a vast over allocation.

— Lack of harmonisation across Europe with regards to eg cap setting, allocation methodology, rules for new entrants etc.

2. Phase II—UK Focus

A. Cap

How likely is it that UK firms would successfully reduce emissions by at least 7 MtC by 2012, in line with the proposed phase II NAP?

In the UK Government's NAP for phase II[8] an annual cap of 64.6 MtC (237 $MtCO_2$)—for installations that were covered in phase I—is proposed. This limit is just over two million tonnes of carbon (3.5%) below the cap in the current phase of the scheme (66.9 MtC or 245 $MtCO_2$) and as in phase I the reduction of allowances against business as usual emissions projections will be borne entirely by the power sector (referred to as Large Electricity Producers in the NAP).

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[8] "*EU Emissions Trading Scheme—UK Phase II National Allocation Plan, August 2006*" Defra (August 2006) http://www.defra.gov.uk/environment/climatechange/trading/eu/phaseII-nap.pdf

The proposed annual cap for phase II is equivalent to a reduction of 8 MtC below business as usual emissions in 2010 and, when combined with other policies and measures for the non-traded sector set out in the Government's revised Climate Change Programme released this March will only, at best, achieve a 16% reduction in emissions by 2010 (from 1990 levels)—as opposed to the 20% that the Government has committed to achieve domestically. Whilst WWF would not expect the ETS to deliver all the UK's emissions reductions it is important that it contributes an equitable share compared to the sectors which fall outside the scheme.

Therefore, WWF consider that the cap for phase II should have been set at 60.5 MtC per year. In 2000 when the Climate Change Programme began, the traded sector accounted for approximately 46% of the UK's CO_2 emissions. An annual cap of 60.5 MtC would ensure that the traded sector's share remains at 46% in 2010[9].

WWF supports the Government's intention to require reduction in emissions from the power sector, given that it:

- is the biggest source of CO_2 emissions, and its emissions have increased by 19% since 1999 (largely due to a switch back to coal burn);
- is least affected by international competition;
- is the sector which is most able to pass on its costs; and
- is able to make large windfall profits (a recent Carbon Trust report[10] estimated that the UK power sector had made approximately 1 billion Euros in the first year of trading).

However, for phase II it is now appropriate for manufacturing industry—particularly those sectors less exposed to international competition—to receive allocations which are tighter than business as usual. It is unacceptable that emissions from major business should be increasing at a time when the UK is struggling to meet its domestic CO_2 targets (eg in the draft UK NAP, the proposed allocation for industrial sectors in 2010 was approximately 19% above average emissions in 1998–2003). In addition—whilst the UK was short of allowances overall in 2005—this was because of high emissions from the power sector due largely to a return to coal burn. The allocation to energy intensive industries was in fact 9.5 million tonnes above what they actually emitted. As long as industry is able to comply with the ETS without having to trade, the full cost of carbon will not be factored into investment/production decisions.

B. Allocation Methodology

Has the government identified the correct proportion of allowances to be auctioned in phase II? Should these be drawn solely from the power sector's allocation? What will the effect of this auctioning be on industry and the price of carbon?

The UK is so far one of the few countries that has committed to auction a percentage of its allocation during phase II of the scheme. Currently very few member states, other than the UK, have committed to some level of auctioning eg Ireland 0.5%, Netherlands 4%, Poland 1.5%, Lithuania 2.7%, Luxemburg 4.8%, Belgium 0.29%, Austria c 1%[11].

In the UK it is proposed that 7% of the allowances will be sold and these will be deducted from the power sector's allocation. The impact of the ETS on electricity prices is dependent on the price of carbon and, according to the overarching RIA[12] which accompanied the draft NAP is "expected to be independent of the number of free allowances allocated to generators" presumably because the power sector will pass on its costs regardless of whether it has had to buy its allowances or been given them for free. As the sector therefore that is most able to pass on its costs and also most protected from international competition we agree that for phase II allowances to be auctioned should be deducted from this sectors allocation.

At an EU allowance price of between 15 and 30 Euros auctioning 7% of its proposed annual allocation would generate between 258 million and 517 million Euros worth of revenue in the first year of phase II alone. This revenue could be used to:

- further develop and implement low carbon and energy efficiency technologies; and
- and potentially partially (if compatible with state aid rules) be recycled back to those few industrial sectors which are most exposed to international competition.

[9] The use of emissions trading means that you cannot guarantee that reductions will happen within the UK. WWF is prepared to accept this provided the system as a whole—the collective NAPs (including the level of the cap, access to project credits etc.)—is robust and does actually lead to significant emissions reductions.

[10] "*Allocation and competitiveness in the EU Emissions Trading Scheme—options for phase II and beyond*" The Carbon Trust (June 2006).

[11] Note that not all of these NAPs have been notified to the Commission.

[12] "*EU Emissions Trading Scheme phase II—overall partial RIA*" Defra (August 2005) http://www.defra.gov.uk/corporate/consult/euets-phasetwo-nap/ria-overarching.pdf

Indeed in his speech on 29 June about the UK's NAP for phase II, David Milliband stated that the government intented to establish an environmental transformation fund. However, it is not clear at this stage whether the funds from auctioning of allowances will contribute to this fund and if so what proportion or how the rest of the funds will be spent.

Although the UK's commitment is short of the 10% maximum which WWF advocated, the decision to auction will, as well as generating considerable amounts of revenue, ensure that the power sector, the single biggest emitter of carbon emissions, is obliged to pay for some of its right to pollute up front. It will also help to partially redress the windfall profits gained by this sector during phase I (and will continue to gain during phase II). In addition the UK intends to auction surplus allowances from the new entrants reserve and those not allocated as a result of closure so in reality more than 7% will be auctioned—though in total this is still likely to be less than 10%.

C. Competitiveness Concerns

What have been the effects of phase I so far on competitiveness of (1) business in the UK, and (2) business across the EU? What are the key issues for phase II in terms of ensuring that emissions reductions from EU states are not cancelled out by the transferring of industry to developing countries?

WWF considers that the impacts of the ETS on the competitiveness of industry during phase I have been widely over-stated by the Confederation of British Industry and other business lobby groups. Research by the Carbon Trust[13] has shown that, if implemented properly across member states, the ETS will not significantly threaten the competitiveness of European industries including most energy-intensive sectors. One of the few sectors seen as facing significant pressure is aluminium, which falls outside the scope of the scheme. The Carbon Trust says: "The EU ETS is the right basic approach for incentivising change in power generation and in energy intensive sectors while at the same time minimising competitiveness impacts." In addition a report for OFGEM concludes that "Overall, there are no grounds at present for thinking that EU ETS will have major negative impacts on EU or UK business relative to foreign competitors"[14].

Furthermore, the latest Carbon Trust report on this issue[15] states that most participating sectors will profit from the ETS during phase II even if:

- total free allocation of allowances is significantly below business as usual emissions projections (with all sectors contributing some level of cutback depending on how exposed they are); and
- 10% (the maximum) of allowances are auctioned.

The report goes on to say:

> ". . . competitiveness is not a serious concern in terms of the direct impact of phase II EU ETS costs. Rather, Phase II is likely to be a phase in which most of the participating sectors can accrue profits from the EU ETS, that can be used to assist investment, for example in low-carbon technologies."

D. Access to Project Credits

How well are the EU ETS and the CDM working together? What needs to be done to better integrate these markets? Is the CDM funding the right projects?

With regards to access to project credits the ETS Directive reads:

> "In accordance with the relevant provisions of the Kyoto Protocol and Marrakech accords, the use of the mechanisms should be supplemental to domestic action and domestic action will thus constitute a significant element of the effort made."

Importing credits from CDM and JI projects could make it cheaper for industry in the EU to reduce emissions. However, access to significant volumes of cheap credits from overseas could also disincentivise investment in clean technology development in the EU, slow down innovation and divert attention from the need to reduce emissions domestically. There is a real concern that phase II will be awash with cheap project credits transferring the responsibility of tackling climate change from the industrialized nations in the EU to developing countries abroad.

For phase II for example the UK has proposed an 8% (of the total allocation) limit on the use of project credits. This equals approximately two thirds of the total difference between business as usual emissions projections and the total cap (ie the level of effort). No qualitative limit (beyond that established by the Linking Directive) has been set. Other countries have proposed even higher levels eg up to 25% of the total cap in Poland, up to 50% of allocations to installations in Spain.

[13] "*The European Emissions Trading Scheme—implications for industrial competitiveness*" The Carbon Trust (2004) http://www.carbontrust.co.uk/Publications/publicationdetail.htm?productid=CT-2004-04&metaNoCache=1

[14] "*Emissions Trading—impacts on electricity consumers*" OFGEM (February 2005) http://www.ofgem.gov.uk/temp/ofgem/cache/cmsattach/11936—SummaryETSdiscussion.pdf

[15] "*Allocation and competitiveness in the EU Emissions Trading Scheme—options for phase II and beyond*" The Carbon Trust (June 2006).

WWF considers that, in line with the "supplemental" wording in the Directive the limit on the use of project credits should be considerably lower than 50% of the total effort. WWF recently commissioned Ecofys UK to assess the impact access to large/unregulated amounts of project credits could potentially have on the scheme during phase II. The analysis focussed on the following Member States NAPs which account for roughly 80% of emissions in the scheme:

— Germany, UK, Poland, Ireland (notified to the European Commission); and

— France, Spain, Italy, Portugal and the Netherlands (draft NAPs).

The preliminary findings of this study are enclosed with this submission but in summary:

— Current caps suggest minimal level of effort beyond Business as Usual (BAU) for a number of countries.

— Allowed use of JI/CDM credits is significantly larger than the expected shortage so all abatement could potentially take place outside the EU.

— Allowed use of JI/CDM credits in phase II of the EU ETS is likely to be below the expected global supply once the potential use by governments to meet their Kyoto targets is taken into account.

— Initial estimates show that up to one third of the project credits available during 2008–12 will be from non-CO_2 gas abatement projects. Industrial gas abatement projects often have little or no wider sustainable development benefits and do not help catalyse the transition to non-fossil fuel based energy systems in project host countries, nor do they encourage greater energy efficiency.

A full report will be released later in the year. We will forward this on to the committee when it is available.

We would also argue that imposing a qualitative limit is also important. In our response to the UK's phase II NAP consultation we urged the government to only allow credits from Gold Standard projects to be bought during phase II. The Gold Standard is an internationally recognised benchmark which sets important sustainable development criteria for emission reduction projects[16]—criteria which are currently lacking from the CDM Executive Board standards. At present the CDM is dominated by credits generated from projects to abate industrial gases such as HFCs. These projects have little or no wider sustainable development benefits and do not help catalyse the transition to non-fossil fuel based energy systems in offset host countries nor do they encourage greater energy efficiency. It is also important that the criteria on additionality are not watered down. The Gold Standard offers further assurance of additionality.

E. Other Member States NAPs—Recommendations for the UK Government

The Environment Secretary has said "we will support the Commission in its efforts to enforce tough caps". What exactly should the Government be doing to influence this?

We would encourage the UK government to work both directly with the Commission and other Member State Governments, and through the Commission's Working Group 3 in order to ensure that robust NAPs are enforced across Europe. Specifically to encourage:

— tough caps which entail a significant reduction from business as usual emissions and which will ensure that the EU-15 meets its Kyoto target of an 8% reduction in greenhouse gas emissions from 1990 levels during 2008–12;

— greater levels of auctioning (10%) to ensure that industries begin to consider the cost of carbon upfront; and

— lower limits on the use of project credits (considerably below 50% of the effort) to ensure that the majority of abatement takes place within the EU and that energy efficiency and low carbon technologies are encouraged.

3. Post 2012

A. Caps—Recommendations

What have been the effects of the method chosen for allocating allowances in phase I?

— **The use of emissions projections—**In both phase I and phase II governments have relied on future emissions projections as a method of setting the caps. We remain very concerned about this. Using this method, whilst giving permits out for free, clearly acts as incentive for industry to inflate emissions projections in order to ensure it maximizes the number of permits it receives—which have a significant financial value on the carbon market. Emissions data for 2005 supports this view. In Europe overall CO_2 emissions from industry were 44 million tonnes below permitted levels under the scheme. Even in the UK emissions from energy intensive industries were 9.5 million

[16] see http://www.cdmgoldstandard.org

tonnes below their business as usual allocation. This fundamental flaw should be rectified by ensuring that future allocations are based on a "distance to target" approach which sets a percentile reduction on a fixed historical baseline rather than on questionable and uncertain emissions projections and we would encourage the review of the scheme to take this into consideration.

— **An EU wide cap—**The case for setting an EU wide cap should also be considered. Cap setting at as aggregate a level as possible can best ensure efficiency, transparency and fairness of process.

— **Sector emissions reductions—**Finally and as indicated previously in this response we would recommend that future caps should include significant emissions reductions for all sectors (not just the power sector)—varying the percentage cuts from different sectors depending on how exposed they are to international competition and their abatement potential.

B. Allocation Methodology—Recommendations

— We would advocate that future allocations for new and existing plant should be based on 100% auctioning. As highlighted previously—all other allocation methodologies that give allowances for free (grandfathering and benchmarking) fail to provide the non-distorting incentives needed to drive investment in cleaner technologies and fuels and actually encourage industry to inflate their emissions projections in order to maximise the number of free allowances they receive.

If a full auctioning system is not accepted by phase III, then a two track approach could be applied:

— all allowances to the power sector should be allocated by full auctioning by the beginning of 2012; with allocation to other sectors being based on Best Available Technology benchmarks; and

— the allocation to the other sectors should rely on a phase-in of partial auctioning, eg 20% for the third phase, 30% for the forth phase etc (with the rest of the allocation based on BAT benchmarks).

Benefits of adopting auctioning include:

— consistentency with the "polluter pays principle";

— simplification of the scheme. Auctioning would remove the need for complex allocation methodologies and rules to deal with new entrants, plant closures, rationalisation etc;

— encouraging operators to consider the cost of carbon upfront and assess their investments accordingly. Interest from management level in the scheme would therefore likely grow. If governments continue to allocate allowances for free then it is likely that the operation of this scheme will, in some sectors, remain the remit of the environmental manager who may not have responsibility for making decisions on future investments/plant operation;

— redress of windfall profits eg those gained by the power sector; and

— the generation of revenue which could be used to further develop and implement low carbon and energy efficiency technologies; and potentially partially (if compatible with state aid rules) be recycled back to those few industrial sectors which are most exposed to international competition.

C. Access to Project Credits—Recommendations

— The limit on the use of project credits should be based on a proportion of effort. This proportion of effort should be considerably lower than 50% of the total effort and the clause "supplemental to domestic action" should be explicitly defined in the Directive.

— In addition the Directive should be amended so as to only allow credits from Gold Standard certified projects to be used to aid compliance with the scheme. Failing that—credits from nuclear power and forestry sinks[17] should continue to be excluded from the scheme and credits from hydro projects must continue to be obliged to meet the World Commission on Dams guidelines.

[17] Examples of why we do not support forestry sink projects are as follows: although trees absorb CO_2 whilst they are living, it cannot be guaranteed that a new forest will be permanent. It is eventually likely to succumb to disease, fire, or logging—releasing the CO_2 into the atmosphere once again; depending on the method used to calculate the amount of CO_2 stored—whether other pools of carbon in the forest are taken into account (e.g. soil, leaf litter), and other factors—estimations of the amount of CO_2 that a forest can absorb can differ vastly; large-scale monoculture tree plantations often have negative impacts on the environment and forest communities; and buying credits from forestry projects does nothing to lessen society's dependence on fossil fuels to generate its energy—something that is ultimately needed to address climate change.

D. Expansion

General recommendations:

- As a general rule, the ETS should be mainly focused on larger installations and large emission sources (with the possible exception of aviation). However, we understand that UK Ministers have written to the European Commission urging the inclusion of surface transport in future phases of the ETS[18]. We urge caution in this approach until better understanding is available of its practicality and its impacts on all sectors.
- In general, with the exception of aviation we would suggest that the focus, for phase III, should primarily be on refining the existing scheme. Beyond phase III—the inclusion of other gases and sectors could be considered—but the potential of reducing emissions by the inclusion of a sectors/gases in the EU ETS should be compared to other policies and measures to see which is the most environmentally and economically effective.
- We remain unconvinced by the arguments for the inclusion of domestic offset projects. If there is large greenhouse gas abatement potential in a sector then arguably it should be governed by a separate policy and not be used to allow emissions from the traded sector to grow.

We consider the following to be some of the key principles for the inclusion of new sectors in an environmentally effective way:

- only include:
  - large point source emitters—ensuring enhancement of the liquidity and so efficiency of the scheme at least implementation cost;
  - sectors where emissions can be clearly defined, monitored and reported;
  - sectors where cost of expansion does not outweigh abatement benefit;
- sectors should only be included where other policies such as mandatory efficiency standards or taxation are likely to be less effective in reducing emissions; and
- harmonisation of expansion across the EU should be ensured.

Key concerns regarding the potential inclusion of road transport

One suggestion is that if road transport were to be included, initially the cap would be placed on the fuel suppliers (due to the impracticality and cost of a downstream approach which would place the cap on car owners). However, this upstream approach also raises significant concerns such as:

- **Ownership of emissions**—the fuel supplier does not own or have control over the emissions and it is not clear how this upstream approach would influence the behaviour of the downstream users eg drivers and manufacturers;
- **Market distortions and price impacts**—it is extremely likely that, in the short term at least, that road transport would be a net buyer of emissions credits from other sectors—rather than reducing its own emissions. There is a concern, therefore, that a weak cap would be set initially to ensure that there were sufficient allowances to cover emissions from this sector. If a tighter cap were set on this sector this would likely create an upward pressure on prices which might well lead to weaker caps being set for other sectors in order to compensate for this—leading to very little actual abatement taking place as a result of the scheme overall.
- **Other measures—**as with the inclusion of aviation there is a risk that the inclusion of road transport into the ETS might be used as an excuse not to impose any stronger/more effective measures such as mandatory fuel efficiency standards or taxes that would better directly address emissions from this sector or to delay the implementation of these.

E. Investor Predictability and Incentivising Low-Carbon Investment Post 2012—Recommendations

The ETS should be a critical tool in helping the EU achieve emissions reductions targets post 2012. It should also provide a blueprint for similar schemes throughout the world. However, key to the success of the scheme is that it encourages increased investment in low emission or emissions reduction technologies.

We consider the following elements to be key to incentivising such investment:

- in advance of an agreement being in place on post 2012 global emissions reduction targets the European Commission and European Council must send a clear signal that the ETS and hence the carbon market will exist far beyond 2012;

[18] "Surface Transport and CO_2 Emissions Trading", Letter from Darling, A, Beckett M and Johnson A written to Stavros Dimas, EU Commissioner for the Environment. London: House of Commons Library (2006).

— strong early signals on medium and longer term emissions reduction targets for sectors under the ETS should be provided by the EC and Member State governments. This could follow from the establishment of an annual Carbon Budget (at the EU or member state level) which sets year on year emissions reduction targets;

— longer phases should be considered in order to tie in with industry investment cycles; and

— there should be more auctioning in future phases. If all installations had to pay for their allowances up front then there would be a clear incentive to reduce emissions so that fewer allowances would need to be bought.

In addition, and importantly, in the absence of an international agreement that puts in place a global carbon price consideration needs to be given now on how to protect the strategic competitiveness of investments in Europe post 2012, over longer periods and under higher carbon prices. Some of the options available to do this are outlined in the recent Carbon Trust report[19]. We would recommend that options to address this are fully considered in the review.

4. Recommendations Regarding the Inclusion of Aviation

How should aviation be included in the ETS? What are the latest indications of when it will be included?

As the fastest growing source of greenhouse gas emissions the lack of political action on aviation can no longer be justified. It was therefore a welcome move, when in September 2005 the European Commission outlined their intention to bring forward a legislative proposal to include the climate impact of the aviation sector in the EU Emissions Trading Scheme[20]. This is due by the end of 2006 and will be taken into consideration during the general review of the ETS—now expected to commence in October 2006.

Provided the system is designed in the ways in which we suggest in this document we would consider the inclusion of aviation into a Europe wide Emissions Trading Scheme to be an adequate first step in starting to address the climate change impacts of this sector. However, on its own the scheme is unlikely to deliver, at least in the short term, significant emissions reductions from aviation. Indeed, the Commission's communication recognises the need, that, in parallel to the consideration of including aviation into the ETS that existing policies and actions should continue to be strengthened.

We would emphasise, therefore, that inclusion of aviation in the ETS should be developed, not in isolation, but as part of a complementary package of policies and measures eg NO_x en-route charging etc. As it is unlikely that aviation will actually enter into the scheme before 2009–10 at the earliest (due to the two to three years it may well take for the legislative proposal to pass through the European Parliament and Council co-decision process) we would like to see these additional measures implemented at the earliest opportunity and certainly before 2010.

Key design features are as follows:

— **Geographic scope—**this should cover all international flights (from and to EU airports)—not just flights between EU destinations which account for just 40%[21] of the total emissions from aviation in the EU. This is important not just for an effective emissions trading scheme but also for other policies and measures which could seek to address the climate impacts of aviation.

— **Coverage of climate impacts**—the climate impacts of aviation are two to four times higher than the impact of CO_2 alone (excluding the potential effects of enhanced cirrus cloud formation) and flanking instruments (eg NO_x en-route charging) to address these impacts should also be introduced as soon as possible.

— **Cap—**The sector should be given a cap which will deliver an absolute reduction in emissions from a fixed historical baseline. Due to the international/cross national boundary nature of the aviation sector it would be sensible for the cap to be set at the EU level and not by individual member states participating in the scheme, and for the same rules to be applied to allowance distribution across the sector. Cap setting at as aggregate a level as possible can best ensure efficiency, transparency and fairness of the process. Such harmonisation of allocation would also prevent competitive distortions which may occur if member states set differing cap levels, and may also reduce the administrative costs related to allocation decisions to member states.

— **Allocation methodology—**The aviation sector should be required to buy 100% of its allowances at auction. All other allocation methodologies that give allowances for free (grandfathering and benchmarking) fail to provide the non-distorting incentives needed to drive emissions down or encourage investment in cleaner technologies and fuels and are likely to generate huge windfall profits for the sector (eg potentially in the magnitude of billions of Euros per year, assuming an EUA price of between 10 and 30 Euros per tonne of CO_2, the sector were to receive all of its

[19] "*Allocation and competitiveness in the EU Emissions Trading Scheme—options for phase II and beyond*" The Carbon Trust (2006).

[20] COM(2005) 459, 27.9.2005 Reducing the Climate Change Impact of Aviation.

[21] Estimates of CO_2 emissions from Eurocontrol. 2004 estimates indicate that intra-EU flights emitted around 52 $MtCO_2$ while all departing flights emitted 130 $MtCO_2$.

allowances for free and were to pass on the opportunity cost of allowances to the ticket price[22]). Auctioning also supports the "polluter pays" principle, rewards good performance and generates revenue.

— **Closed vs open scheme—**from an environmental point of view and prior to the inclusion of aviation into a post 2012 agreement our preference would be for a separate closed scheme where companies could trade with each other and have limited access to project credits. A separate pilot scheme dedicated to the aviation sector would trigger reduction measures in this sector while avoiding Kyoto allowances—eg the allowances derived from legal Kyoto implementation policy—being mixed with allowances from a non-Kyoto sector such as aviation.

As argued for in its February 2005 communication[23] we agree with the Commission that the international post-2012 climate change commitment should include emissions reductions commitments from international aviation. If aviation were included it could then potentially be incorporated into the wider EU ETS. However we would support the European Parliament's proposal[24] which states "Any arrangement by which aviation was incorporated into a wider ETS would need to take account of the sector's sheltered status and apply appropriate conditions eg a cap on the number of emissions rights the aviation sector could buy from the market (to avoid market distortion against less protected areas), and a requirement that aviation make a proportion of the necessary reductions before being allowed to buy permits."

— **Use of project credits—**The aviation sector should only be allowed to buy credits from Gold Standard certified projects to aid compliance with the scheme. Failing that—credits from nuclear power and forestry sinks should be excluded from the scheme and credits from hydro projects must be obliged to meet the World Commission on Dams guidelines as is the case in the existing ETS Directive. The limit on the use of project credits should be based on a proportion of effort. This proportion of effort should be considerably lower than 50% of the total effort and the clause "supplemental to domestic action" should be explicitly defined in the Directive.

October 2006

[22] "Giving wings to emissions trading, inclusion of aviation under the European emission trading system (ETS): design and impacts" CE Delft 2005. Report for the EC, DG Environment.
[23] (COM(2005) 35, 9.2.2005.
[24] "*Report on reducing the climate change impact of aviation (2005/2249(INI))*" A6-0201/2006, European Parliament report.

Witnesses: **Dr Keith Allott,** Head of Climate Change, and **Ms Kirsty Clough,** Emissions Trading Policy Officer, WWF-UK, **Mr John Lanchbery,** Principal Climate Change Adviser, and **Mr Martin Harper,** Head of Government Affairs, RSPB, gave evidence.

Q58 Chairman: Welcome. I think you are all familiar with the Committee and most of the members, so we will not ask you to introduce yourselves, unless you particularly want to, but thank you very much for coming in. I think you heard all or most of the previous session, so we will try not to cover exactly the same ground, although there may be some particular points that you want to mention. Could I start on the Stern Report, which finally saw the light of day three weeks ago and I think has been, rightly, fairly widely welcomed. Before we get on to specifically what Stern said about emissions trading, would you like to give an overall reaction to the Stern Report?

Mr Harper: I will kick off, if you like, and then pass on to colleagues. I think the RSPB and others do see it as very much a momentous report. I think that probably the most significant thing is that it has bucked the economic trend in the thinking regarding climate change. So, rather than considering it is economically more sensible to wait and allow human ingenuity to pick up the costs of climate change, it is actually suggesting that it makes economic sense to mitigate now to make sure that we actually prevent experiencing the worst of the damage. There are two other things worth saying. I think that the from our point of view it is great that they have positioned issues such as avoiding deforestation more centre stage (so this is one of the cheaper ways in which you can deal with mitigation) and, thirdly, I think what it does provide is a sense of optimism that, if you do address economic costs now and put in place measures now to tackle the issues, there is a good chance that we can avoid the worst of the problems, but colleagues can expand on this.

Mr Lanchbery: To add a little bit to that, obviously I agree with what Martin says, but (and there is a "but" in the Stern Report) he does use a range of emission stabilisation scenarios which are too high. So, the concentration ranges he mentions, which are between 450 and 550 PPM, and he actually uses the 500 to 550 PPM scenario more, will not take us below the two degrees target, which is the EU target to which we all subscribe.

Dr Allott: From WWF's point of view, we fully endorse the positive message from Stern. Particularly, I think, the thing which strikes us most powerfully is the sense of urgency which we feel very, very strongly and we feel gives a very powerful economic rationale for that urgency which we see from other directions as well. Also, the 450 to 550 PPM range (just to spell this out) we feel is the weak spot of the report. Just to be clear about this, 450 PPM CO_2 equivalent gives you roughly a 50/50 chance on current science, and the science seems to be going only one way at the moment, which is, unfortunately, in the wrong direction, but on current

science there is a 50/50 chance of staying below two degrees. At 550 PPM we are more than likely exceeding three degrees, there is a very significant risk of hitting four degrees. Nick Stern himself in the detail says that 550 PPM is a very dangerous place to be, with deeply unpleasant consequences, so we do ask why he is recommending it as an acceptable boundary.

Q59 Chairman: Presumably because anything lower than that as a target would, first of all, greatly increase the urgency, obviously, but might question the message about affordability and economic requirements.

Dr Allott: I think the answer to the question is an interesting one, because one thing to take, I think, from Stern is that, regardless of which stabilisation scenario you go for, the message is that we need to have global emissions peaking within the next decade or so. The question then is how quickly we start to fall. So, for the immediate policy, actually the focus should be on peaking global emissions very quickly. Then there is a question about how quickly we could, or should, try to reduce emissions from that peak.

Mr Lanchbery: To be fair to Stern, I think there are two reasons why he has not considered the low end of the range. Firstly, there are relatively few studies which cost achieving a 450 stabilisation; that is a sort of fairly major reason. The other one is that he thinks, I think, it might be difficult to do practically. However, it does not necessarily mean that we should not do it if we want to avoid the two degrees, and he says actually that it will be expensive, somewhere in there, to stay at 450 or below but he does not actually justify that statement. It is not justified anywhere in the rest of the report, so you might take him up on that.

Q60 Chairman: We are hoping to have a session with him in due course. On emissions trading, he does say that post 2012, post Phase II, the shape of the ETS could be very influential in how global trading might or might not evolve. What is your judgment about how important the success or failure of the ETS is in terms of the global process of tackling climate change?

Mr Lanchbery: It is very important. It is the only operational scheme of its size certainly in the world and, as the Environment Agency said, it is the only one that trades between different countries, albeit as part of the Union. So it is very, very important that it succeeds, which is why we have all been very disappointed about the over allocations for the first phases which brings it into disrepute.

Dr Allott: I would entirely agree with that. Just to spell it out even more, there are two processes which are now running which will very much determine the credibility of the ETS. Firstly, the decisions on the Phase II Allocation Plans: we are expecting the first results of the Commission's thinking on that within the next few days, and then there is the review of directive for Phase III, both of which are happening right now, and both of those processes will be critical in determining whether the EU ETS is actually going to deliver on what we want it to be seen as, which is, and as Stern sees it, as a nucleus of a future global trading scheme. The basic principles of the ETS are right in terms of the framework of mandatory absolute caps. We are concerned that if ETS fails because of lack of political will, with a short-term focus that fundamental principle, for instance, will be lost and we will then have a global trading regime built on a much slacker framework.

Q61 Mr Caton: Can we look at UK emissions targets now. The Government says that Phase II of the EU ETS will save eight million tonnes of carbon a year from the UK, but that is calculated on the basis of business as usual projections if we did not have an emissions trading scheme. What are your views on using those sorts of projections rather than looking for absolute cuts?

Mr Lanchbery: We should not. It is a bizarre way of reaching a target to do a business as usual projection, lop a little bit off it and then say you are trying to meet a target. If you are going to meet an emission reduction target, you need an absolute budget of emissions which decreases over time so that your budget in the end is exactly the same as the target you are trying to get to. It is absolutely bizarre to use a projection, except to inform you of how much you would have to do (what is the difference between what you might do and what you need to do), but you need to set allocations to the EU ETS on the basis of an ever reducing absolute budget for carbon. There is not another way to do it. Projections do not take you to your target.

Dr Allott: We entirely agree, and I would also point out that continuing to rely on business as usual projections, which assume a business as usual world in the absence of the ETS, is an increasingly bizarre and untenable approach. The ETS exists; therefore it forms part of the business as usual world; they are caught in its logical loop.

Q62 Dr Turner: At the moment it seems difficult to think that the operation of the ETS so far has saved a single tonne of CO_2 from being emitted anywhere in Europe, let alone determining whether it has been saved in the UK; but when Defra announced the Phase II allocations they said it would help reduce the UK's carbon emissions from the 16.2 level that we are at by 2010 as compared to 1990, in other words, the revised figure in the last climate change policy statement. Was Defra justified in making that claim?

Dr Allott: The basis for that assumption is, firstly, that there is a robust emissions trading scheme around the whole system. An emissions trading scheme is only as strong as the weakest link. Every part of that chain needs to be robust. Behind your question there is the issue about where the emission reductions take place and whether they take place within the UK or in another country, and that is a difficult question to reconcile with the national cap. The truth is that once you have an international trading scheme you start to lose control over where your emissions do come from. Whether Defra is justified in making that claim, I think the jury is out,

and a lot will depend on what happens in the next few weeks in terms of the Commission holding a line on the allocation plans that we are currently seeing. It is clear that the current overall picture is not good. We are getting positive signals from the Commission in terms of the line they are going to take, but clearly this is a high level political thing. We are getting positive signals from the DG environment, but this is a much wider high level political issue in all the aspects of the Commission, and some parts of the Commission take a different view.

Q63 Dr Turner: If the ETS Directive is acted upon literally, the Member States have to accept national allocation plans that are in line with the Kyoto targets, but it does not really actually say how much it would work in practice. What wording or mechanism do you think the UK Government ought to be pressing for the Commission's review of this directive? Do you think it is sufficiently explicit to work?

Mr Lanchbery: No. It certainly has not worked, so therefore it is not sufficiently explicit or certainly not sufficiently mandatory. We would like to tighten that up considerably, at least to say that the allocation should be directly proportional to, or better than, that Member State's target. A better way still would be to have an overall EU cap. Let us assume that the EU, as a whole, agreed to a 30% reduction by 2020. If you did that, then that would be the level below the 1990 levels at which the allocation would be set. You would have to have a burden-sharing arrangement of some sort to divvy it up, but you could do that. At the moment, you are right, the directive is quite loose. I think at the time it went through the Council and Parliament they were actually being quite reasonable, and they said this covers about half of European CO_2 emissions, very roughly, and there are measures you could take in other sectors. So, in some countries perhaps they really are going to tackle the transport, domestic sectors and make the most of their emission reductions in those sectors so the traded sector would not have to do very much, but, frankly, that was wildly optimistic thinking. The place where the biggest reductions can be made faster is mainly the sector covered by the Emissions Trading Directive and the transport and domestic sector have been politically harder to touch, so it was perhaps a bit idealistic, if not naive, of the original drafters to put the wording in the way that they did.

Dr Allott: I would agree with all of that and also stress the importance of the targets, and in fact more than just a single target, which we think would be absolutely necessary, which would be at least a 30% cut for the EU by 2020. This is being proposed by at least three major countries at the moment, the UK—Gordon Brown confirmed this at the time of the Stern Report—also Germany and France are supporting this target. The big question will be whether the EU as a whole signs up to it next spring Council. That would provide a very strong framework. We would like to go further than that and actually see an elaboration of the carbon budget idea to give a clear trajectory.

Q64 Dr Turner: Given the tenor of your remarks, do you have any optimism at all that the ETS is going to deliver significant carbon savings?

Dr Allott: We have optimism that it is the right basic mechanism, but the mechanism is only as good as the targets that are set, and that is a question of political will. It is clear, as you say, that it is not delivering significant emission reductions, if any, in Phase I. That is to do with the cap-setting process. It is also to do with the fact that the rules for Phase I were very confusing because there were no Kyoto targets in place in Phase I, the benchmark was that Member States had to show that their cap was set to be on a trajectory to deliver the Kyoto target, so the trajectory can take any shape that you like. Now we have an absolute benchmark, which is the Kyoto targets, and we are really hoping that the Commission will stick to its guns on that and get very tough. It does have a benchmark and this is the crucial few weeks to determine the shape of the scheme.

Mr Lanchbery: You mentioned when you were questioning the Environment Agency the possibility of a carbon tax, but in fact what has happened with the EU Emissions Trading Scheme is that because they have set the caps very low, or very high rather, it is the equivalent for the carbon tax of setting the rate at 0.01 pence. It is how you use the instrument properly that is the question and how you set the targets rather than the instrument itself which, like Keith has said, we think is basically sound although it has some deficiencies.

Mr Harper: May I add one point about this. I suppose, as the UK Government is toying with the idea of introducing a carbon budget, the ETS is going to be the personification of why it is so important to make sure that the target is linked to caps and therefore the policy measures try to make a contribution to those targets, and until one has that carbon budgeting system in place, then any one policy measure could not necessarily be deemed to be making a contribution. I think the classic case with the Emissions Trading Scheme is that, unless it is directly linked to a target which determines the cap, as the Chairman said in his statement to the Environment Agency, then I think it will have its credibility undermined, which I think we all fear but we are all optimistic that there will be the political courage coming from the different Member States to try and put that in place.

Q65 David Howarth: Can I go back to the question of auctioning allowances. I will be interested in any comments you might have on the exchange of the Environment Agency, but also there is one specific thing in the WWF memo to us about how much money the Government might make out of auctioning allowances, and I would like to put on record how much you expect the Government to make out of auctioning allowances and what might be the best way of spending that money?

Dr Allott: The first principle of auctioning is that it is clearly the most environmentally and economically efficient way of sorting out this allocation process. We have got ourselves into a terrible mess, and what

was initially designed to be a simple market mechanism has become incredibly complex and bureaucratic: because as soon as you move away from auctioning you have to start having all sorts of special rules to deal with new entrants, plant closures, plant modification, a whole range of other things start coming in which makes the system very complex. You have perverse incentives from grandfathering, you have the difficulty of benchmarking, a whole range of things come in. Auctioning is clean and simple, it does also provide, as the Environment Agency was saying, an internalisation of the carbon cost into all decisions, both existing plant and for new plant, which is precisely what we need to see in terms of influencing behaviour and sending long-term signals to companies when they are making investment decisions, and so, on all those bases, we think it ticks an awful lot of boxes, if not all of them. In terms of the revenue raising aspect of this, the positive side of that is that if you assume an EU allowance price of about 15 to 30 euros, which at the time we submitted the memo seemed a reasonable amount—clearly this moves up and down, but if you assume that range—with 7% auctioning as proposed by the UK Government, that would generate between roughly 250 and 520 million euros worth of revenue per year in Phase II. Clearly, there are very interesting questions about how you use that, though in the statement the Government also announced the Environmental Transformation Fund, although the linkage in the text was not direct. We are not quite clear whether all of that money is going to be spent on those things the Environment Agency mentioned, but we think that is basically the right way forward: to recycle the money so you have a positive feedback. You are using the revenues from pollution to pump-prime the solutions to this problem, the lower carbon technologies. There is a debate to be had, especially when you move to higher levels of auctioning, about the need for compensation for some sectors which may be exposed to international competition, and we fully accept that there are some sectors, although we think it is greatly overplayed, where it is an issue and I think, subject to state aid rules, there needs to be some creative thinking about the use of the revenues.

Mr Lanchbery: Can I add to that, the reverse of auctioning, of course, is grandfathering, which is what we mainly have at the moment, although not entirely grandfathering for Phase II. That has led to massive windfall profits, particularly for the generators, which has not really caused a scandal here, but it has in Germany. They are furious about the huge profits they have made from giving away the allowances, especially when there is an excess of them, so it is a bit scandalous. The second point is that generators in the UK are increasingly coming round to auctioning—not the German generators, I hasten to add, although they are the same companies, so you do wonder why they have one opinion in the UK and another one in Germany! Nevertheless, the UK generators are tending towards that view, for all the reasons Keith outlined. If you do take early action, then you are rewarded for it; you do not have all these perverse incentives to keep a plant open longer and longer.

Dr Allott: One notes also that if you have anything less than 100% auctioning, at least for a particular sector, then you lose many of the benefits, because one of the big benefits is the simplification. So, if you were to have 50% auctioning across the board, then you are not getting rid of the issue of how you deal with new entrants and planned closures. You may be thinking of putting up full auctioning for the power sector, for instance, and then that sorts that sector out. There are ways through this, but I think 100% auctioning for a sector is the way to think about this.

Q66 David Howarth: And you produce an enormous return on lobbying, do you not, so the rules become very important, and lobbying becomes more important than economic activity? Can I turn to the Environmental Transformation Fund. I suppose the simplest way to look at the question is: is that a misnomer? Is the amount of money that the Government is going to make on its 7% auctioning enough to justify the name of the fund, assuming there is a connection between the two?

Dr Allott: We would like to see the details of how much money they are actually planning to spend on the Environmental Transformation Fund and more details about how they are going to direct it. Clearly, if they spend all the revenues that we have tried to put a ball park figure on in supporting non-nuclear low-carbon technologies (I think is the definition), then clearly that could make a very significant difference.

Q67 Chairman: Given the importance of making this whole scheme work properly and given the enormous obstacle that anything other than auctioning represents to making it work properly, do you think there is a realistic chance of getting to 100% auctioning in Phase III?

Mr Lanchbery: There is a chance. I am not sure if it is highly realistic, but there is a chance. The UK's position is for 100% auctioning—they certainly favour auctioning—and a number of other states are coming round to that view, partly because of what Keith said. I was talking to an Austrian person on the way back from Nairobi and he was finding just doing all these things, like providing a new entrants reserve, and all that sort of thing, administratively terribly unwieldy from the Austrian Government's point of view. It does not really benefit industry in particular. Although it gives them initially a windfall, it does not benefit all industry, who also, as you were discussing earlier with the Environment Agency, find it administratively hard, especially small installations, and so you would just remove all their benefits. I think governments are increasingly finding that it would be rather worthwhile, certainly from their point of view, to get rid of all these very difficult, tricky things they have to implement with not auctioning. We live in hope, but I am not quite sure how much hope.

Q68 Chairman: Where is the resistance? First of all, these difficulties were not exactly unforeseeable. They may not have been foreseen, but they certainly were not unforeseeable. What was the objection in the first instance to having auctions and what is the resistance now to moving very swiftly towards it?
Mr Lanchbery: I know it is primarily a business, but particularly some groups who have a reasonable wealth, like the energy intensive people who use a lot of energy, whose emissions are high, they would be quite hard hit by an auction because they feel that they cannot reduce emissions. Having said that, a lot of them say they have in the past made their organisations more efficient. In that case auctioning will reward them for their past behaviour, but they have tended to take a very blanket, overall industry view and say, "No, no, no, we want reward for our historical emissions", which is what is meant by grandfathering.
Dr Allott: I think there is a chance of us getting towards 100% auctioning, we are certainly pushing it very strongly, but within that there is a debate. I think it is quite important to separate out the business group into the power sector (the electricity supply industry), and the manufacturing industry. They are very different in terms of their size, their exposure to international competition, their ability to pass on costs and make windfall profits. I think, as a bottom line, we would want to see 100% auctioning for the power sector which is, as John said, making huge windfall profits across Europe, and we are starting to see some movement within that sector. There is another debate to be had about the manufacturing industry where they are exposed to international competition, but for me the way through that is to have a discussion and a debate about the use of the revenues.

Q69 Mr Challen: Carbon emissions have risen from the power sector by 14% since 1999, largely due to the increasing use of coal. Do you think that allowance prices should rise in order to make coal more uncompetitive?
Dr Allott: I would like to see that.

Q70 Mr Challen: How much would you have to go?
Mr Lanchbery: As the Environment Agency people put it, to get a high price you need a tight cap. A tight cap would dominate the market. What has happened so far is there has been a market failure, the instrument is not working. If the instrument were properly applied, then it would dominate the market and it would dominate the effect of increases or decreases in fossil fuel supplies, but it does not. As the Environment Agency guy said, the difficulty is that fossil fuel prices are far more dominant in the market than the very small effect of the EU ETS, which is again making the case for a much tighter cap on the scheme.
Dr Allott: I would like to point out an interesting point about the UK's return to coal. The UK is one of the countries in Europe where there is the greatest potential for fuel switching between gas and coal—this is one the of the stranger things that has happened—which has allowed the UK to position itself as having done very well and been one of the more aggressive countries in Phase I because our emissions were above our allocation, unlike many other countries. The reason for that is that we have rushed back to coal with a vengeance because we were able to, because of the scope for fuel switching, and they did that in the full knowledge of the carbon price, in the full knowledge of their cap, and they decided it was still economically justified to do that. So, to turn it round, the UK's claim to be the good guys is just that the power sector has rushed back to burning coal. If you look at the detail, again splitting up the power sector from the manufacturing industry, the manufacturing industry in the UK was just as over-allocated as everywhere else in Europe. The emissions from the manufacturing industry, which were based on a business as usual projection, were considerably below the actual allocation. In other words, we over-allocated, as did as everybody else, because we relied on business as usual projections, and the UK's slight halo on this in terms of, "We are the good guys in Phase I", is simply because we rushed back to coal and so our emissions were higher. It is a slightly perverse situation.

Q71 Mr Challen: Looking at coal a bit more in the context of security of supply, that is a very important issue, very often on the lips of DTI ministers, there is equal importance given to that as to climate change issues. How should that issue be managed within the Emissions Trading Scheme particularly in relation to coal?
Mr Lanchbery: I should say, as a preface, that a lot of the coal burnt is not ours. I cannot remember the ranking exactly, but it is the Digest of UK Energy Statistics produced by the DTI, and the three biggest importers of coal, the three biggest suppliers of coal into the UK are Russia, South Africa and Poland, so it is not our coal. If we are talking about security of supply, I am not sure if we are any more secure importing coal from Russia or South Africa than we are using imported gas, which comes from Russia or Algeria.

Q72 David Howarth: Norway actually.
Dr Allott: I think an issue on the future of coal is that coal does have a role. The existing power stations and their lifetimes have recently been extended to an extent which has surprised everybody by the number of power stations which have opted in to the Large Combustion Plant Directive. This means that they have decided to fit sulphur dioxide abatement equipment, which allows them to run at an unrestricted load factor for as long as they like[1]. Because of an unfortunate combination of circumstances, including very perverse signals in the UK allocation plan detail, they have been encouraged to opt in to the Large Combustion Plant Directive which means that we are now committed to burning more coal to justify those very heavy

[1] Clarification from witness 27.11.06: This means that they have decided to fit sulphur dioxide abatement equipment, which allows them to run at an unrestricted load factor up to 2016 and potentially beyond if they then fit nitrous oxide abatement equipment.

investments in abatement. That is the first point to make. The second point is that, if coal does have a role, and think it is a very open question in the future as to how it should look, it should be on the basis of clean coal, and that means carbon capture and storage. We and other environmental groups have very serious issues around carbon capture and storage. We think it may have a potential role as part of a global solution to the climate change problem we are facing, but the first question is: is it going to work? If it is going to work, we need to find out as soon as possible. If it is not going to work, we need to find out as soon as possible so we can devise alternative strategies. So we see a role for it, especially for countries like the UK to be at least making sure that we are exploring the technology and finding out if it is a runner. The question then will be whether the ETS is a vehicle to make sure that this happens or not. We do not think it is. I think the way that we would like to frame this would be in terms of—. We have talked about the Large Combustion Plant Directive which sets timelines for abatement and emission limits for sulphur dioxide. Maybe we need to think in terms of a new Large Combustion Plant Directive aimed at carbon dioxide with absolute deadlines for fitting abatement plant. Any new plant would have to be fitted with carbon capture from the outset and maybe deadlines for phasing in carbon capture for existing plant if they want to carry on running. This is not necessarily a pro carbon capture and storage position at all, it is an anti-unabated coal position. Especially in the industrialised countries, where we need to be moving towards very significant cuts in our emissions of 80% or more by 2050, we simply should not be building unabated coal-fired power stations.

Mr Lanchbery: I should add that CCS is seen in general, I think, as only an interim measure, it is at best an interim measure, so it would always be wiser to go for energy efficiency or renewables of some sort, and, of course, they are far more secure. Energy efficiency is ultimately secure, of course, and so are renewables because they are all domestic. So that is our concern, that CCS might divert people's attention away from the real long-term options, although, as Keith has said, it is absolutely clear that China and India are going to use their coal, because they have got an awful lot of it, and so the problem does have to be addressed abroad as to whether or not they use CCS, and one suspects they probably should.
Dr Allott: I fully agree with that point.

Q73 Mr Challen: Somebody is going to have to use it. Forty per cent, I believe, of our generation comes from coal, I might be slightly out on those figures, but it is a huge percentage and will be for quite some time. You were expressing doubts about CCS. Is that on a technical basis or for some other reason?
Mr Lanchbery: It is mainly that if the industry were prepared to develop the technology and deploy it, then that is fine. If they want to do that, that is okay. What we are concerned about is that they are mainly asking for government or international money from the World Bank to develop these programmes and we are concerned that there is always only a finite pot of money and if they put it into CCS they will not put it into renewables and energy efficiency, that is all.

Q74 Mr Challen: There are a lot of things we do not want to put into money into, and nuclear is another competitor for that honour.
Mr Lanchbery: Indeed.

Q75 Mr Challen: Forty per cent of the UK's electricity generation, as I understand it, comes from coal. We have heard about the one gigawatt a week in China, and I do not know what the figure is in India. We are going to have to have CCS whether we like it or not, regardless of these other strategies, so should not the ETS encourage that through carbon credits rather than us taking a sort of sniffy line about it and saying, "We do not really like it because it is just a filling in"?
Dr Allott: I think the response to that would be to say that it may be the ETS might not be the vehicle. If you do want to have CCS coming into play, the ETS may not be the vehicle to deliver that. The analogy I would draw would be on the model I suggested in terms of having some regulation to remove unabated coal from the market, for instance, with energy efficient appliances, perhaps having some regulation which could remove the least efficient appliances from the market and then some fiscal incentives to encourage people to buy the more efficient appliances that are still on the market. That would be the model for regulation to rule out unabated coal, and then the ETS would provide the incentive within the acceptable boundaries defined by that regulation. Just to come back to the security of supply point, I think there are some issues buried in your question which are to do with this energy gap question and coal's role and the role for nuclear. Various pieces of work that we did for the Energy Review showed very clearly that the energy gap is actually a political choice. When we talk about "energy gap", it is always an electricity gap. This is part of the problem that we have got in terms of energy policy in this country, but, just talking in terms of electricity, serious policies to curb electricity demand and to also deliver on the stated targets on renewable energy would essentially make that electricity gap, rather than energy gap, virtually go away, both in terms of coal and gas, without leading to ridiculous degrees of overdependence on imported gas.
Mr Lanchbery: As to whether the EU ETS should encourage carbon capture and storage or, indeed, nuclear, it is an interesting point in that, of course, if you built a new plant and it is genuinely a zero carbon technology, then your allocation under grandfathering would be zero; or, indeed, if you are going to auction, then you would need to buy no credits, and so it depends how it is introduced. If you are talking about encouraging it through the clean development mechanism, that is another matter, although I would not see CCS or, indeed, new nuclear plant coming on within the period of the second phase of the EU ETS.

Q76 Dr Turner: You do not seem to have much confidence in ETS making any contribution to encouraging CCS. The Carbon Capture and Storage Association tell me that they have a raft of big projects ready to go which would be greatly accelerated if the fiscal conditions were right, and at the moment they are a rather cloudy screen. I am still not quite clear why it is you think that putting in place a credit system for carbon capture and storage in the ETS could not be part of that picture and could not be useful?
Mr Lanchbery: If you had auctioning it would not so much credit it as it would not debit it. So, if you are going to build a conventional coal-fired plant, then you would have to buy a lot of allowances and, if you were going to build a plant with CCS which had no emissions, then, of course, you would have to by no allowances. So it would, in that sense, incentivise it. It would not penalise it, in other words, rather than incentivise it, but it amounts to the same sort of thing; so there would be a benefit, yes.

Q77 Mr Caton: Both your organisations have close links with sister bodies in other European countries, and so I guess you are in a good position to give us a bottom up international perspective. Can you give us a picture of the level of pressure on tackling climate change in other European Union countries and, in particular, the state of debate on the future of the ETS?
Dr Allott: One general observation. I think it is rising very rapidly. John and I were at the UN Climate Change Conference in Nairobi last week and in Germany (and we will come on to Germany and talk about their allocation plan, which is much less good than we might have liked) one of the things that was very striking there was that the German Environment Minister got by far the biggest round of applause (four minutes)—much more than David Miliband—when he stood up and gave very strong support for the EU as a whole taking on a 30% reduction target by 2020, and he said that if the EU did that Germany would take on a 40% target. So there is real movement happening around Europe on this, and we just need to see it translated into real, hard decisions on things like the ETS. I do not know if John has any general comments, but Kirsty has got a very good picture of some of the individual ETS related aspects.
Mr Lanchbery: In general we have worked on WWF's work, and I know WWF have done quite a lot of work on this, where we all belong, with most of the big development groups, to a grouping called Climate Action Network Europe. We have worked through that and that has been active in most of the big countries and quite a lot of the small ones, but it is more active, as in most environmental areas, in the northern European countries—the Scandinavians, the Brits, the Dutch, the Germans—and the activity declines as you go down, generally speaking. There is very little activity in Spain, some in Portugal though. Most northern European states have been pressurised to a greater or lesser extent by the environmental groups and to some extent by the development groups actually, and most southern European states have seen little or no pressure.
Ms Clough: Following on from what Keith has said about the German NAP, Germany is now looking at its NAP, I guess on the basis of what was said in Nairobi last week, but also there is an indication from the Commission that it is likely to be rejected in the next few days anyway. There are issues, I guess, with all the NAPs that have been submitted, but some strong caps have been set eg Spain's cap. The Italian cap in its initial draft was quite strong; that has now been watered down somewhat, but it is still looking quite good. To highlight an activity that WWF did, we created a statement that was then signed by 50 economists across Europe showing support for emissions trading as the best way to tackle climate change, and that was delivered to the Commission a few weeks ago to try and show consensus amongst that sector of the community. I can talk about some of the other NAPs if you would like to hear about those too.

Q78 Mr Caton: If we could have that in writing it would be useful for the Committee?
Ms Clough: Yes, sure.

Q79 Mr Caton: From your knowledge and perspective, is there anything the UK should be doing now to influence the Commission and perhaps the more reluctant Member States to move forward at this time?
Dr Allott: On emissions trading specifically?
Ms Clough: On Phase II?

Q80 Mr Caton: Yes.
Ms Clough: There is a decision on the first eight or nine NAPs in the next few days, but the decision on the remaining NAPs, I assume, will not happen for a couple of months; so I think there is still some time to be putting pressure on other Member States to improve their NAPs and also on the Commission to keep the robust line.
Mr Lanchbery: The UK has been having consultations with both the environmental groups and the business groups together on developing a manifesto for the post 2012 phase, which has been very welcome: because I think we can probably agree with the big business people a number of headline issues on which all, or most of us, would agree, and Mr Miliband is hoping to take that forward into Europe and use it as a manifesto, as he calls it, within Europe, although we are not quite sure how he is going to use it, nevertheless it is an interesting idea.

Q81 Joan Walley: Following on from how much the UK can influence what is happening in the European Commission at the moment, I wonder whether or not you would see a role for more cross party working of environmental audit committees such as ours, working with parliamentarians in other parliaments at another route, at another level, somewhere between what a government is doing and what is happening at the local level?

Dr Allott: Absolutely. I think this is a crucial issue in terms of whether countries are serious about their Kyoto targets under the EU burden-sharing agreement, and I think that this is a very serious issue for public debate and political debate that needs to be held up to scrutiny. I fully support it.

Mr Harper: I would agree with that. I think that any extra pressure that we can secure from the domestic parliaments, particularly if you were successful in developing a similar manifesto along the lines John has described Mr Miliband has tried to do with businesses and NGOs in the UK, then I think that would give much more confidence to the decision-makers when they come to Council to consider the evolution of the directive, because I think that on the outside, notwithstanding all the technical details, it is slightly perverse that there are targets, and therefore there is an expectation that the Emissions Trading Scheme will actually help to meet those targets and at the moment they are not, and, therefore, that undermines the credibility of this, which is the central pillar to tackling climate change that we have at our disposal at the moment. Sharing that concern about the lack of trade credibility amongst colleagues in other domestic parliaments, I think, would be incredibly powerful and hopefully give our leaders a little bit more stomach to go that extra mile.

Mr Lanchbery: There is also scope for working with the European Parliament, of course. We had a very good meeting about three or four weeks ago in the European Parliament, which was attended by 25, 30 odd members of the European Parliament (which was very good bearing in mind that the EU ETS was not up for discussion at that point) from all parties. Obviously the Greens were there, but there were conservatives, socialists, and so on and so forth, and they were very interested in the topic indeed. The Parliament has been very good on this issue over the years, and so it would be useful if you could co-ordinate with your European colleagues as well. I am sure they would welcome it.

Q82 Joan Walley: That is an avenue that certainly this select committee could explore, and if there was anything further that you wanted to share with us on that I am sure we would gratefully receive it, particularly when we have such a limited amount of time in which to deal with this and we need as many parliamentarians and as much pushing that is going on focused on this agenda really. Can I turn to the issue of industrial competitiveness, which certainly is a matter of concern to those with constituencies with energy intensive users. The comments that you have made, or not so much that you have made but which the Energy Intensive Users Manufacturing Lobbying Group have made, that so far most of the low-hanging fruit (if I can put it that way) of energy efficiency has already been taken up and that if we are going to go ahead and make further carbon reductions, there would need to be heavy investment in new kinds of technology. It seems to us that may be the EU ETS scheme would not allow those incentives to be there in that. I just wonder what you say to this and how you see this being taken further forward?

Dr Allott: We quite often hear that the potential for energy efficiency has already been exhausted, we hear that in all sorts of different sectors, and, frankly, experience suggests that is not case. Firstly, to draw attention to a study that we have recently completed from ECOFYS into the Emissions Trading Scheme, this study estimates that there is a very significant, very short-term emissions reduction potential of about 110 million tonnes of CO_2 per year within the manufacturing industries covered by the ETS and a third of that, 35 million tonnes, would be achievable at zero or low-cost. That is a very significant saving which is just sitting there waiting to be tapped which is not yet being met. The point is that is on current very low carbon prices and if we had a reasonable carbon price the energy efficiency potential is that much greater. Behind that though, clearly there are issues of competitiveness, and we have been reading with great interest a lot of the work that has been done by the Carbon Trust on this which makes very clear that the issue is manageable, with the exception of a handful of very exposed sectors, most notably aluminium, which is actually outside the Emissions Trading Scheme at the moment, they are hit by the second effect in terms of impacts on electricity prices.

Q83 Joan Walley: Which are the industries in that handful?

Dr Allott: The key sectors identified by the Carbon Trust are, in descending order, aluminium, which is quite exposed because of its high electricity consumption and, therefore, any increase in electricity price, however small, they feel very strongly, then steel, then cement. We can refer you to the Carbon Trust studies in later correspondence, if you would like. Those reports make clear that these competitiveness issues are not real issues for Phase I or Phase II of the Emissions Trading Scheme. They may become significant issues beyond Phase II, particularly for those sectors, and that very much depends on what happens in terms of the move towards a global framework where there is everything to play for at the moment in terms of the international negotiations, and the Carbon Trust recommends various strategies to deal with an outcome where there is not a full global carbon market to help protect those sectors which may be exposed. These options would include things like a border tax adjustment. For instance, if the US were to stay outside a future framework, there is a case to seriously explore looking at a tariff for imported goods.

Q84 Joan Walley: How would that be compliant with WTO rules?

Dr Allott: There are different views, it depends which lawyer you talk to on this, but there are enough lawyers out there who say it is perfectly doable. Interestingly, one message is, if we move to

auctioning, it is much more likely to be compliant with the WTO rules than if we do not move to auctioning.

Mr Lanchbery: I should add that, as you probably know, all of the emission reduction potential is taken from the generators in both Phase I and Phase II. So, the energy intensive users and everybody else gets a business as usual increase in allocation, so they are not directly hit. If electricity prices go up slightly as a result of the targets the electricity producers have to reach, then that cost will be passed on to their customers, which includes the energy intensive users. So, we are not talking about the overall allocation affecting these companies, it is just the knock-on price of the electricity, and, as Keith implied, the very big firms are affected by other things in addition to the knock-on price of electricity. Cement, for example, obviously produces stuff in vast bulk and you simply do not build all your cement-producing plant in China and then ship it to the UK, and so, when we have the Olympics here in a few years' time, they will build a large cement plant somewhere near London; they will not ship it in from abroad.

Q85 Joan Walley: You would apply that to cement, but how would that apply to ceramics, which are much easier to carry round the world than large quantities of ceramics?

Mr Lanchbery: It may be applied to ceramics. So in the case of ceramics, yes, there may be a case to be made. I am not saying there is no case to be made, I am just saying there are a number of exaggerations; so ceramics may be the exception, and glass perhaps also.

Dr Allott: Just to elaborate on John's perfectly correct point about the business as usual allocations to the manufacturing industry, in real terms what that means is if you look at the allocation that is proposed for Phase II per year, say in 2010, that means that the emissions from the manufacturing industry will be allowed to be 19% higher than they were in 2000[2]. This is over a period where we are meant to be getting emissions on to a serious direct downward trajectory. The Government is off course for its domestic carbon reduction target and yet a very significant sector of the economy is being allowed to increase emissions by 19% simply because of these issues about competitiveness. This goes back to the heart of the question about relying on business as usual projections to underpin your allocation, and I just raise the question of whether that is an appropriate approach in the carbon constrained world as set out by Stern.

Q86 Joan Walley: Finally, you have been very confident in what you have said that groups such as the Energy Intensive Users Group and the CBI have been really exaggerating the threats to British industry and to competitiveness. Is the justification for that mainly based on the work that you referred to earlier that has been done by the Carbon Trust?

Dr Allott: The Carbon Trust, and there have been a couple of other reports as well. There was a report done for Ofgem some time ago as well. I would agree that there is a lack of independent, rigorous analysis of this question and we would like to see more of it, but I would say that the CBI and other groups in the debate over Phase I and in a more muted way, I think it is fair to say, the debate over Phase II have still been playing this card on the basis of no concrete evidence. During the debate on the Phase I Allocation Plans, I think it was before this Committee where Digby Jones from the CBI himself said that there was no evidence that any UK company had closed down as a result of any environmental regulation, which seemed very hard to square with the general message that he was giving.

Q87 Joan Walley: Given what you have said about this handful of industries, and you have admitted that ceramics is one, would you recommend some kind of further research to look at how the interface is with this handful of industries which perhaps would not be within the big umbrella?

Mr Lanchbery: It would be useful to have some independent research, certainly. I should add that, although we sometimes criticise the CBI, the CBI has been rather more advanced in its thinking than its equivalents across Europe. The BDI in Germany is just awful, frankly.

Q88 Chairman: Can we turn to the CDM. The theory is that the CDM and joint implementation credits are supplemental to the domestic cuts. If the concept of emissions trading is to direct resources to where you get the most cost-effective reductions in emissions, why should we not allow unlimited use of CDM and JI credits?

Dr Allott: There are two levels to that. The first one is the credibility of the CDM and the whole basis of it, which is that, on a project by project basis, you are trying to justify that you are reducing emissions below a notional business as usual baseline. It is inherently counterfactual, there is the fundamental problem that you are always going to have business as usual projects getting in under any CDM project based approach, so it is not as robust as a national cap and trade scheme. That is the first point. Then, within that, whether the rules as currently applied on additionality are as strong as they should be, certainly there is strong pressure to weaken them even further, which we are concerned about. I think there is also a fundamental question as to what you are trying to achieve with an emissions trading scheme. At the moment, and under the Stern perspective as well, there are two objectives. One of them is to deliver a reduction in our own, or Europe's own, emissions and to get us on to a low-carbon trajectory. The other one, especially post Stern, is to use it as a mechanism to leverage finance to help developing countries move on to a decarbonised pathway. If you are trying to do two different things with the same policy, I would say that means you need to have a clear operational rule to make sure you deliver both objectives. For us that

[2] Clarification by witness 27.11.06: (average emissions 1998–2003).

means you have to have a very clear set of rules for limiting the number of CDM credits that you can import into the UK, or the EU, which is applied in a harmonised way across all countries. That would make the supplementary principle real rather than a vague concept which is being ignored in the breach.
Mr Lanchbery: We take a rather more purist view in that, within the EU ETS, we would prefer there to be no project-based credits, simply because if you have project-based credits in any cap and trade scheme you necessarily inflate the cap, so the target is sloppier than it would otherwise have been. In Kyoto we do support some use of credit, but it is an interesting balance between the two. Unless you have tight caps on developed countries, the price of carbon will be insufficiently high to drive decent projects in developing countries. So it is a chicken and egg thing. If you flood the market with very cheap credits, with credits from developing countries, they will necessarily be cheap—that is why you buy them, you buy them because it is cheaper than doing it at home—so it is a difficult question to answer. Most of the CDM projects that you get, for example, the favourite at the moment is cutting HFC emissions because that is cheap—it is about half a dollar a tonne or CO_2 equivalent—so everyone goes down that path, but that is the sort of thing that should be regulated out, frankly. It should not generate credits anywhere; it is ridiculous. Generally speaking, we favour the EU Emissions Trading Scheme being intended for reducing emissions at home. It is also, from a leadership point of view, in the international negotiations. If we do not reduce our emissions in the European Union, it is going to be very difficult indeed to persuade developing countries to limit their emissions in any way at all. It is very difficult to argue that you are reducing your emissions when, in fact, you are buying all your emission reductions from somebody else, notably in their country; so there is a sort of moral argument to be made for taking a leadership role by reducing your own emissions and whether we believe in moral arguments or not, a lot of the big developing countries do and they take them very seriously.
Dr Allott: I agree with a lot of what John has said. I think our only slight difference is that we see a role for a small reliance on imported credits but that should be compensated by having correspondingly tighter caps. The key to this, as always, is having sufficiently tight caps, otherwise the whole thing falls apart. There is a specific issue to do with supplementarity, which is live and now under the Phase II NAPs, and perhaps I could bring Kirsty in on a study we have just completed looking at the degree to which Member States are trying to restrict the use of CDM credits or not.
Ms Clough: This is the study that Keith referred to earlier by ECOFYS, which essentially assesses the quantities of project credits that Member States are proposing to allow in and, if they do allow in all these credits, it could essentially mean that no emissions reduction takes place with the EU during Phase II, it will be exported overseas, which is quite a significant finding and quite worrying from our point of view.

Q89 Chairman: Have you put a figure on the percentage that you think is acceptable?
Ms Clough: Currently we are saying significantly less than 50% of the effort that an industry is required to make to meet that reduction target.

Q90 Chairman: What was the objection to HFCs counting?
Mr Lanchbery: It was an artificial way of generating credits and, as people have known HFCs and CFCs have an effect on the atmosphere for many decades now, you should not have allowed these plants to be built to produce them, and stopping them is dirt cheap anyway, which is why people get credits for them. There is a slight suspicion that the same thing is happening in that area as happened under the Montreal Protocol when some countries were deliberately building CFC production plants in order to get the money to close them down, and one begins to feel this may be happening again.
Dr Allott: The economics of this are such that if you were to build a new HCFC refrigerant facility in a developing country and then fit a very cheap one million dollar abatement incinerator to destroy the HFC by-products from the HCFC production, the revenue from destroying the greenhouse gas pollution would be far greater than what you get from selling the product from the factory. In other words, you are building a carbon credit factory rather than a refrigerant factory, and you can just pour the refrigerant down the drain, which is, to our way of thinking, slightly perverse, to put it mildly.

Q91 Chairman: On forestry, and the World Bank has issued a report about this, what is your reaction to the idea that we need to have a financial value on preserving an existing product?
Mr Lanchbery: We support that very strongly in principle. Obviously there is carbon value to not cutting down trees and releasing the emissions into the atmosphere and there are equally obvious biodiversity and human benefits. The way forward is not as clear. The mechanism proposed by Papua New Guinea, Costa Rica and a group of rain forest nations where you would have a commitment to limit your rate of deforestation which, if you did better than that limit, you would get credit for it in the and international trading market would seem instinctively the way to go, because that would raise significant amounts of money if it was part of the Kyoto scheme. On the other hand, there are other ways of doing it, there is the so-called fund-based approach that Brazil has proposed, but it is very hard to see how you would get countries to put sufficient money into a fund to pay the countries with the rain forest not to cut them down. Another approach would be to use existing project-based mechanisms. A lot of countries at the end favour instinctively the approach proposed by Papua New Guinea, Costa Rica et al, but there are difficulties with it, and one that came up in Nairobi was that the Congo Basin Group, who belong to the coalition that is formed round Papua New Guinea and Costa Rica, point out that they do not actually deforest much, for various reasons, at the moment and they

have not for a long time. If you are going to give credit for reducing your rate of deforestation, what does the Congo Basin get out of this and what incentive would you give them? In the extreme case of Costa Rica itself, where they are actually increasing their forest, they would not get anything either. So, it is quite an interesting time at the moment on the avoiding deforestation front. Everybody agrees it is a very important problem and it needs to be solved, but there are many different policy approaches to doing so, and nobody is quite sure, which is the best one, frankly.

Mr Harper: What we are sure about is that trying to develop a process under the Kyoto Framework is the best game in town, given that there are not other international forestry conventions which are driving forest protection at the moment, so getting this right is crucial. As I understand it there is going to be a workshop in March to try and explore some of these issues in a bit more detail so that we urgently have a new process whereby those states that have large amounts of rainforests are rewarded appropriately for keeping them intact.

Q92 Dr Turner: Both your organisations agree that you want aviation to be brought into the ETS, but what you do not agree on is how you treat the non-CO_2 effects of aviation. Could you each set out your positions on that, the pros and cons?

Mr Lanchbery: We would advocate the use of a multiplier on CO_2 emissions, that seems to be the most practical solution. Having said that, estimates of the extra effects of non-carbon dioxide, I was going to say emissions but that is not correct, are debateable. The IPPC a few years ago said there were something like three or four times the effects of CO_2 alone. More recent studies done by the European Union indicate that it is perhaps two to three, so you cannot be absolutely sure what size multiplier you use. However, this sort of difficulty has occurred many times internationally about estimating things and you can always take a reasonable value of, say, in this case, perhaps two and a half and then review it every five or 10 years. If the science shows it is more or less than that you use that but we think it would be a big mistake to take into account the effects of CO_2 only because that would not take into account the environmental impact on the atmosphere.

Ms Clough: I agree with what John just said but I guess our initial preference would be for there to be a separate charge, a nitrous oxide emissions charge, to take account of the non- CO_2 effects. If that does not happen by the time that aviation is included in the scheme then we want to see a multiplier on CO_2 emissions. There was a leak last week from the Commission about the aviation proposal which ended up in a few newspapers and they indicated that they would be looking at tackling possibly additional effects of nitrous oxide as well. It sounds like they might be thinking about a multiplier approach.

Chairman: I am going to have to slip away, Joan Walley is going to take the Chair.

In the absence of the Chairman, Joan Walley was called to the Chair

Q93 Dr Turner: The final question before you can escape, both our Secretaries of State for the Environment and Transport and, indeed, DTI have urged the Commission to include surface transport in future phases of the ETS scheme. How do you think this would work in practice? What are your views on whether it should be included and how it should be done?

Dr Allott: I think the first question to ask is who you place the cap on. There are three basic candidates. There is the motorist, there are 250 million motorists around the EU and given that the ETS is meant to be for the big boys, as we heard earlier on in the discussion about hospitals, we do not think that is a starter. Maybe in a future world we will go to EU-wide personal carbon credits, but we are quite a long way from that at the moment. The other candidates are a cap on the fuel suppliers or a cap on the car manufacturers. A cap on the car manufacturers is very difficult because it is to do with an assumption on the future emissions from a new car. No-one knows how far a car will be driven, how well it will be driven or what fuel will be used. A cap on fuel suppliers appears, as far as we can gather, to be the Government's favoured option. The problem with that is that the fuel suppliers do not have an awful lot of influence on the actual emissions, they do not have an influence on the choice of purchasing decisions of motorists or on the technology decisions of car manufacturers. The only thing they have some influence on is the actual fuel composition where they could increase the proportion of biofuels, for instance. We already have a Renewable Transport Fuel Obligation and Biofuels Directive which is aiming to achieve that objective already. We are not quite sure what the added-value is. We think that what it would lead to would be a small, it would be a helpful but small increase in essentially road fuel taxation which, for political reasons, appears to be why the Government is flirting with it because after the road fuel protest they are frightened to do anything direct on road fuel taxation. The big concern is that including surface transport in the ETS would crowd the political space for a much more focused, targeted action which would lead to reductions from the road transport sector. At the moment there is a consultation going on about replacing voluntary agreements on fuel efficiency with the car manufacturers. It is a well-known fact that these are failing to deliver, and there are ideas to replace them with a system of mandatory standards which we fully support, again, provided the standards are sufficiently rigorous. The DfT recently consulted on options for replacing voluntary agreements. Those options included more voluntary agreements, which we do not think is a good idea, mandatory targets which we support or putting car manufacturers under the Emissions Trading Scheme which we think is a total wild card and will fail to deliver any technological transformation in the sector.

Mr Lanchbery: We largely agree with that, and I think the only way to do this would be at the tax point, for example, an upstream allocation where the fuel comes out of bond which is essentially the same as Keith said. We would be interested in seeing the proposal fleshed out rather more to see if the DfT do have anything to add on it. Frankly, we do not see the proposal getting anywhere in Europe, the Europeans we have talked to have just sort of sniggered. They do not think it is on at all, but they could change their minds. At the moment it does not look like a runner. Our favourite for the transport sector would be a well-to-wheel, or more correctly a well to carbon tax, which would be, we think, targeted in just the right place. That would replace all other instruments if you did that, but we think that would be simple and target precisely what we are trying to get at with Co_2 emissions.

Q94 Dr Turner: Clearly, the ETS has distinct limits to the things which it can address. It is not capable of being a universal carbon making mechanism.
Mr Lanchbery: It is unlikely. In practical terms, it was very administratively difficult to deal with more than a few thousand of entities, whatever they are. It was hard to see how schemes that included small businesses and indeed, individuals would actually work. Government does not administrate at that sort of level and the costs of administration would be huge. Generally speaking, you are after big boys or agglomerations of units or you try somehow to sneakily do the allocations upstream so the ideal Emissions Trading Scheme in a way would be to put the allocation on where the fuel comes out of the ground or at the point of entry into your country, but that is taking it too far. That would be the ideal thing, then you only have a couple of players.
Dr Allott: Clearly I agree, and emissions trading is hugely important but it is not the silver bullet. Transport is one illustration but another illustration would be the power sector. There are two strategies for reducing carbon emissions from the power sector, one is de-carbonising your generation mix and one is reducing demand. The ETS only in the very bluntest of ways begins to tackle demand, you need to have complementary measures in other sectors. There are whole issues to do with infrastructure which the ETS does not begin to touch, to do with behaviour change, so it is a very important component in the overall mix, but there is a danger that it is being seen in some quarters as being the only show in town and it is not.

Q95 Joan Walley: It has been a long session and it is our first session and I think all four of you were here at the very start of our inquiry this morning. Just before we finally finish, can I ask you, given the importance of all of this, and the added weight we now have with Stern, one thing that we have not touched on is how we engage with the public in getting their support, their awareness and their understanding about how the ETS is going to change and develop over phase two and phase three. Have you got a final passing word on perhaps what Parliament or the Government should be doing on that?
Mr Harper: Budgets, budgets and budgets, that is the starting point and the end point. If you effectively establish how much carbon this nation as a whole is prepared to emit and that we have a trajectory which is to decline that budget, then essentially all sectors of society have to make their contribution. What you could say is that what the EU is trying to do through the Emissions Trading Scheme is to drive this down but that requires some changes at the ETS level at the moment. People understand the idea of a finite amount of money that they can spend, I think they are going to have to begin to try and understand that there is a finite amount of carbon that we should be prepared to emit.
Joan Walley: I think that is a very good point on which to end. Thank you all very much indeed.

Tuesday 28 November 2006

Members present:

Mr Tim Yeo, in the Chair

Mr Martin Caton
Colin Challen
Tim Farron
Mr Nick Hurd
Mr Graham Stuart
Dr Desmond Turner
Joan Walley

Memorandum submitted by the Association of Electricity Producers

The Association of Electricity Producers (AEP) represents large, medium and small companies accounting for more than 90% of the UK generating capacity, together with a number of businesses that provide equipment and services to the generating industry. Between them, the members embrace all of the generating technologies used commercially in the UK, from coal, gas and nuclear power, to a wide range of renewable energies. Members operate in a competitive electricity market and they have a keen interest in its success—not only in delivering power at the best possible price, but also in meeting environmental requirements.

The Association welcomes the opportunity to respond to the Environmental Audit Committee's inquiry. Contact details for the Association are given at the end of this paper.

We note that this inquiry is designed to assess the prospects for the remainder of Phase 1, and the lessons that should be applied to Phase 2 of the EU Emissions Trading Scheme (EUETS). However, with Phase 1 under way and the arrangements for Phase 2 now largely complete, it is essential for governments to drive forward the preparatory work for the continuation of the EUETS beyond 2012 at international, EU and national level.

1. *What are the key lessons to learn from Phase I of the Scheme?*

Firstly, it is essential that caps on CO_2 emissions across all Member States are sufficiently tight to deliver the EU's Kyoto commitments. Most Member States were "long" on allowances in 2005. Secondly, it must also be recognised that all sectors in the EUETS must share the burden of reducing emissions. These two issues are fundamental to establishing an efficient market which will drive businesses to internalise the cost of carbon and underpin a robust carbon price to support new investment at scale.

2. *How likely is it that UK firms would successfully reduce emissions by at least 7MtC by 2012, in line with the proposed Phase II NAP?*

The Association supports the use of market mechanisms and considers that the EUETS can deliver cost-effective emissions reductions across the EU up to, and beyond, 2012. However, it is a fundamental feature of the trading scheme that it will deliver emission reductions most rapidly at the sites across the EU where they can be achieved at least cost. It is therefore important that the Government makes it clear that, while the EUETS has the potential to deliver reductions in CO_2 within the UK in due course, and play its part in helping to achieve UK domestic targets, it may not do so immediately. The least-cost compliance route may be for UK operators to buy allowances.

UK generators have been required by the Government to shoulder the burden of emissions reductions in Phase 1 of the Scheme unilaterally and, on the basis of the UK National Allocation Plan (NAP) that was submitted to the European Commission in August 2006, are most likely to be required to do the same in Phase 2. There is not enough time for power station operators to invest to achieve the physical reductions required in Phase 1, or a sufficiently high allowance price for them to deliver the necessary reductions by switching fuels from coal to gas, so operators will have to purchase allowances to achieve compliance. Based on analysis of current Member States' NAPs, it is quite possible that a similar situation will arise in Phase 2.

Even so, the Sector routinely continues to seek gains in efficiency through, for example, the re-fit of boilers and turbines, and the existence of EUETS will add to the incentives to undertake these projects. Putting a value on carbon has also aided the economics of achieving emissions reductions through the co-firing of biomass with coal or oil, and in 2005 this resulted in the sector generating about 3 TWh that were eligible for Renewable Obligation Certificates. In addition, one plant in the Sector was converted from a CCGT to a CHP plant with significantly improved efficiency.

There is evidence that the price of CO_2 is being factored in to the wholesale power price and therefore affecting the merit order for generation, but the overriding influence on decisions to use coal or gas in most of 2005 was the high price of gas. There were signs of some level of switching during the summer last year, but with the very high gas prices seen in Q4, output from coal-fired stations increased compared to 2004, thereby raising overall CO_2 emissions for the Sector.

3. *What have been the effects of the method chosen for allocating allowances in Phase I?*

The Power Station Sector was the only sector in the UK Phase 1 NAP that was not allocated allowances equivalent to its projected emissions. The Sector therefore carries the responsibility of delivering all UK emission reductions within Phase 1 of the EUETS ie 67 Mt CO_2, or procuring further allowances from the traded market. That figure includes 19.8 Mt CO_2 that the UK Government had intended to allocate to the sector, based on revised projections of emissions published by DTI in November 2004, but was prevented from doing so by the European Commission. The UEP 26 projections published in July 2006 indicate that electricity demand and the emissions from the Sector in 2010 will be higher than were projected in 2004. This means that the expected decrease between 2005 and 2007 will be less than was projected for the Phase 1 NAP.

In 2005, the difference between allowances allocated to installations in the Sector and the actual emissions from those installations was 36.6 Mt CO_2. This situation is likely to be replicated in the remaining two years of Phase 1, leaving the Sector with a shortfall of allowances in excess of 100 Mt CO_2. Given the relatively short timescale of Phase I, any emission reductions in the power generation sector are most likely to result from fuel switching from coal to gas, as there is insufficient time in Phase 1 for electricity producers to effect major investment in low-carbon technologies. Therefore, given relative coal and gas prices, operators have been, and will continue to be, obliged to purchase additional allowances in the market to cover the significant shortfall allocated to the electricity sector.

4. *Has the Government identified the correct proportion of allowances to be auctioned in Phase II? Should these be drawn solely from the power sector's allocation? What will the effect of this auctioning be on industry and the price of carbon?*

We are disappointed that the electricity producers have, once again, been singled out to bear the entire shortfall of emissions allowances in Phase 2, including the impact of auctioning. Based on our experience of Phase 1, we expected that we would be called upon to make a significant contribution to emissions reductions in Phase 2, but had formed the impression from discussions with officials that a high level of emissions reduction within the Government's stated range of effort would be offset by a low percentage of auctioning and vice versa. It is now clear that we are the only sector being asked to make any level of effort and to bear single-handedly a high percentage of auctioning.

It is clear from the results of trading in 2005 that other sectors in the Scheme have been allocated more than they need and we are disappointed that the Government has not given those sectors the slightest encouragement to participate fully in the EUETS by reducing their allocation below "Business As Usual" in Phase 2. Similarly, other sectors should be required to bear a proportion of the auctioning burden. We believe that over-allocation to other sectors is undermining the scheme. Over-allocation results in industrial installations not being motivated to manage their carbon allocation. This has two major consequences: (a) limited incentive to seek emissions reductions and (b) limited release of surplus allowances into the market which results in allowance price volatility and higher compliance costs to those required to buy allowances to meet their obligations under the trading scheme.

5. *What have been the effects of Phase I so far on the competitiveness of (1) business in the UK, and (2) business across the EU?*

We consider that the direct impacts of the EUETS on the competitiveness of EU industry in Phase 1 have been minimal. This is backed up by the work of a number of analysts, drawing on the limited international mobility of some of the sectors currently covered by the EUETS and the limited costs incurred, if any, by businesses outside the electricity sector in complying with the EUETS.

All sectors in the EUETS must share the burden of reducing emissions. Competitiveness issues have been overplayed in Phases 1 and 2 to justify "Business As Usual" allocations for the majority of sectors. A BAU approach is not sustainable if the UK is to achieve a 60% reduction in CO_2 emissions by 2050. These issues must be fully understood and addressed at an EU level in Phase 3. They are fundamental to establishing an efficient and transparent market which will underpin a robust carbon price to support new investment at scale.

6. *What are the key issues for Phase II in terms of ensuring that emissions reductions from EU states are not cancelled out by the transferring of industry to developing economies?*

There are two main impacts on EU industry arising from putting a price on CO_2 emissions. These are the direct requirement for industry to buy allowances to meet any shortfall in allocation compared with emissions, and the indirect impact of carbon allowance prices on electricity prices. The apparent over-supply of allowances based on current Member State NAPs suggests that the CO_2 allowance price will be insufficient to have any adverse impact, so the transfer of industry to developing countries will be driven by factors other than EUETS, if it occurs at all.

Electricity producers will not close their operations in the UK and transfer to developing countries. However, companies have to compete for capital and if the policy framework and details of the EUETS are not right, investment in low-carbon technologies will not be made in the UK. Consequently, emissions will not reduce, electricity producers will face additional costs for purchasing allowances and both the environment and customers will suffer. The experience of the first year in Phase 1 of the EUETS is that, despite year-end returns recording an over-supply of allowances, the UK electricity sector purchased over 30 million tonnes at prices between €10 and €30 per tonne CO_2.

7. *How well are the EU ETS and the Clean Development Mechanism working together? What needs to be done to better integrate these markets? Is the CDM funding the right projects?*

The Joint Implementation and Clean Development Mechanism are good interim measures for transferring capital and technology. We are therefore disappointed that a disproportionate limit (9.3%) on the use of project credits has been placed on installations in the Large Electricity Producers Sector in the UK's NAP for Phase 2. We estimate that more than 50% of the potential to use JI and CDM may be lost through the means of applying the limit. This would in effect result in the UK meeting a relatively small proportion of effort through JI/CDM which would in turn put upward pressure on the EUA price. The proposed arrangement will at the very least encourage arbitrage of project credits by companies in sectors with no shortfall of allowances. This will inevitably raise the effective cost of ERUs/CERs, will not promote the efficient functioning of the Scheme, and will reduce the overall credibility of the Kyoto framework.

8. *How should aviation be included within the ETS? What are the latest indications of when it will be included?*

As the Aviation sector is not covered by the Kyoto Protocol, we consider that it should be included in the EUETS after 2012. The Government should seek to avoid disturbance to the trading market and to avoid possible price dislocation. The scope of trading initially should be restricted to CO_2 emissions only.

9. *The Environment Secretary has said: "we will support the Commission in its efforts to enforce tough caps". What exactly should the Government be doing to influence this?*

It is essential that we strengthen the resolve of the Commission in its review of the Phase 2 National Allocation Plans to ensure that these are sufficient to deliver the EU's Kyoto commitments across all Member States. Unless we can develop an efficient and transparent market which engages all participants, the credibility of the Scheme may be damaged to a point where it may not incentivise emissions reductions on the scale required. We have written to the Secretary of State for the Environment in support of his idea for an "EUETS Manifesto" and we now await the Government's proposals for taking that forward.

10. *How well integrated are the ETS and other EU climate change policies?*

There is relatively little linkage between ETS and other EU climate change policies at present. In the UK, the linkage is mainly due the fact that Phase 2 is being used to close most of the gap on the Government's 2010 target for CO_2 emission reductions, due to the failure of other climate change policies to deliver.

11. *What work needs to be done now to help design a third phase of the EU ETS? How can the experience of the EU ETS be used to help the design of a post-2012 Kyoto mechanism?*

In our response to the Government's consultation on "Our Energy Challenge" published in January 2006, we identified that the climate change agenda is critical and called for "a clear and credible regime for the reduction of carbon emissions in the form of specific policy mechanisms with long-term and intermediate targets and aspirations". We were therefore pleased to see in the Energy Review Report published in July 2006 that "the Government is determined to ensure that the EUETS develops into a credible long-term international framework for pricing carbon". Businesses in our sector now face a period of substantial capital investment, amounting to some £20 billion by 2020, if they are to maintain security of electricity supply, promote the development of a diverse generating portfolio and move towards the installation of lower carbon technologies. It is vital for investment decisions in low/zero carbon technologies with long development lead-times that a robust carbon pricing mechanism is in place.

We recognise that international agreements are unlikely to emerge quickly, but late agreements on burden-sharing within the EU could lead to the adoption of another short trading period (without an associated long-term emission reduction trajectory), which would threaten the viability of the EUETS and fundamentally undermine the case for large-scale investment in low-carbon technologies. Whatever emissions reduction target emerges for the EU for the post-2012 period, it should be possible to begin discussions early on the means to share that burden between Member States. The metric for burden-sharing eg on a per capita basis, should be considered at an early stage because the sooner that is agreed, the more certainty investors will have. It may also serve as an example for developing countries and inform debate on the future role of other Kyoto flexible mechanisms such as Joint Implementation (JI) and the Clean Development Mechanism (CDM).

Looking ahead, the Government needs to define, and ideally gain widespread political support for, a clear framework and trajectory for UK CO_2 emissions reductions, within a wider EU and international context, out to at least 2030. To build investor confidence, future allocation periods should be aligned more closely to investment cycles and should run for at least 15 years. For electricity producers, the five-year period post-2012 is critical for investment and reducing carbon because the plant that is deployed then will be "locked in" for 40 years. Other priorities for the design of the Scheme are:

— All sectors in the EUETS must share the burden of reducing emissions. Competitiveness issues have been overplayed in Phases 1 and 2 to justify "Business As Usual" allocations for the majority of sectors. These issues must be fully understood and addressed at an EU level in implementing Phase 3. They are fundamental to establishing an efficient market which will drive businesses to internalise the cost of carbon and underpin a robust carbon price to support new investment at scale.

— The harmonisation of rules relating to allocation, treatment of new entrants and closures is important to limit market distortions and minimise competitive impacts, but this must be addressed soon to be in place in time for Phase 3.

— A key uncertainty in trading post-2012 is the role of the JI and CDM mechanisms, or their equivalent, and the potential constraints on the use of credits derived from them by participants in the EUETS. The future of JI/CDM, at least to 2030, must be agreed in international discussions on the post-Kyoto period.

— AEP supports the inclusion of other sectors and gases within the Scheme in principle, provided this is practical, cost-beneficial and well-signalled. However, initiatives to expand the EUETS must not undermine confidence in the Scheme as a firm basis for investment.

October 2006

Witnesses: **Mr David Porter,** Chief Executive, **Mr John McElroy,** Head of Environment Strategy, RWE npower, Chairman of the Environment Committee, and **Mr Andy Limbrick,** Head of Environment, Association of Electricity Producers, gave evidence.

Q96 Chairman: Good morning and welcome to the Committee. Thank you very much for coming in. We have provisionally allocated about 45 minutes for our discussions with you and we have got two more groups of witness to get through this morning, so we will aim to achieve that target, if possible. I have got a table here published by Defra which shows the trend in carbon dioxide emissions from different sources. This covers from 1990 to 2004, and of course what comes out of this very strongly is that as far as the power sector, the energy users are concerned, there was a sharp fall between 1990 and 1999 and there has been a significant rise since 1999. Why do you think that is?

Mr Porter: Looking back to 1990, Chairman, we have an excellent record in our sector. Carbon emissions in 1990 from the sector were just over 55 million tonnes; by 2005 they were 46.9 million tonnes. In 1990 they represented just over 34% of the UK's emissions; by 2005 they represented just over 30%, and all that has happened at a time when electricity consumption has been rising. However, I do not think that the industry can be expected to go on making reductions with a straight line graph, and it is really not surprising that things have levelled out a little bit in recent years.

Q97 Chairman: When you say it is not surprising, can I press you on why you think the previous downward trend has been reversed?

Mr McElroy: Part of that is obviously because of trends in fuel prices over the last few years. The Emissions Trading Scheme did not come into force until 1 January 2005, but in that time we have seen fuel prices move quite substantially, and the driver in the market has very much been to produce electricity at the lowest cost. That has favoured coal over the last few years and hence output from coal-fired power stations has risen. Obviously in the longer term that position may change, but we are in the market as it is at the moment and even with carbon prices as they have been in 2005, that has not been sufficient to reverse the trend. However, I would expect the situation to be relatively flat and potentially declining in the longer term.

Q98 Chairman: That is a helpful bit of analysis. Now we have entered the EU ETS and are a bit more than halfway through Phase 1, what impact has the ETS itself had so far, if any?

Mr Porter: We have to remember, Chairman, that it only took effect in January 2005 so the longer term impacts simply cannot arise in that timescale. For example, it is impossible for a company to decide that it will close down one type of power station and build a new low-carbon power station in Phase 1 of the scheme, or indeed perhaps even in Phase 2, so the impact has been on companies that have had to face up to the fact that there is now a price for emitting carbon, and they have addressed that through making their power stations more efficient, through switching between one type of production and another (where they have that available to them) and also at times having to go into the market-place and buy allowances.

Q99 Chairman: I fully understand why the impact has not been very significant so far. Do you think that it is realistic to expect that by the time we are into Phase 3 that the ETS will have had an impact on what power stations emit?
Mr Porter: I think if we want to reach our emissions targets for Europe, and we have to remember all the time that it is a European scheme, then Phase 3, as you put it, is vital. But we are not even sure at this point that we will have something called Phase 3. We know that we need some mechanism beyond 2012 to drive the reduction of carbon emissions, but at present we are not aware of what that is, and that is a serious problem for the electricity industry in the UK, which regularly asks the Government and the European Commission to make clear as soon as possible to it what will be expected of generating companies beyond 2012. We are facing in the UK investment of about £20 billion in new power stations before 2020, so we are talking about £20 billion in 13 years. The companies know broadly that they are going to have to be power stations that fit within the environmental agenda, but they are desperate to know exactly how that will apply to them. This is quite a serious issue at the moment.

Q100 Chairman: The DTI revised its projections for demand for electricity in 2010 upwards and also its projections of the emissions that that would cause. Are your members doing anything to restrain demand for electricity?
Mr Porter: As generators I suppose the answer, strictly, is not a lot, but a number of our companies of course are vertically integrated businesses that have retail interests as well and they are required to do things to restrain demand. I do not know whether John might like to comment on things like the Energy Efficiency Commitment and other measures.
Mr McElroy: I would have to say that the supply business is extensively involved in the issue of energy efficiency. Clearly within the domestic sector the major instrument is the Energy Efficiency Commitment, which I think has been a very successful policy instrument. We have seen increasing interest in terms of the energy-intensive sector in managing their energy demand over the next few years. I think that is an area where the market in energy services will develop over the next few years, and to a certain extent that will be reinforced by the Energy Performance Commitment which is currently being consulted on, if that comes into force in due course. We are working with customers right across the piece on energy efficiency. I think in the domestic sector there are major challenges in raising customer awareness and securing customer engagement.
Mr Porter: I ought to add, Chairman, that although consumption rose by 26% between 1990 and 2005, it did show signs of tailing off after 2000, so something is happening in the market now.

Q101 Chairman: Do you think, looking ahead, that the operation of the EU ETS can itself have any effect on demand?
Mr Porter: I think it can and in some respects it is meant to, in that the cost of emitting carbon (which became a reality in 2005) is going to become increasingly important, and it will find its way through into electricity prices, and to some extent that will affect demand. However, customers' demand for electricity is inelastic and they are prepared to tolerate quite large rises in energy prices before those rises affect their behaviour. Having said that, I think a number of things have woken people up to the cost of energy. The debate about climate change is one of them and also of course the quite large rises in fuel prices in the last couple of years have had that effect as well. And at home, where we did not care about leaving something on standby or leaving lights on very much, we now take it more seriously, and there must millions of people with the same reaction.

Q102 Colin Challen: We have heard a great deal about concerns over windfall profits for the power companies after the introduction of the ETS. In fact, the DTI commissioned a study which estimated these profits to be in the order of £800 million a year. You are making this money because you have raised your prices to take into account the market value of the allowances under the ETS that you are using up, even though you received the original allocation for nothing. What is the justification for that?
Mr Porter: I think there have been a great many misunderstandings about those allegations and that report that went to the DTI. The starting point is that until January 2005 an electricity company making electricity could emit carbon free of charge. As from January 2005, in one way or another, the emission of carbon was going to impose costs on that company. Those costs arise either through having to switch fuels, to run different plant at different times to meet demand, and they also arise when companies are unable to stay within their emissions allowance and they have to go into the market-place and buy allowances, and I will ask my colleague John McElroy in a moment to comment on what that actually means and how much money has to be spent to buy allowances. So there is another side to this story and when we looked at the report—

Q103 Colin Challen: Can I just ask how many companies have got to the point where they now have to buy allowances?

Mr Porter: Could I come to that in just a moment. I was going to say that the report to the DTI was riddled with assumptions, and I think it was very much a worst case headline that came out in terms of the extra revenue that went to the electricity industry. One way or another, however, this is meant to increase costs, and that is bound to flow through into prices. Companies have been accused of making gains. Actually the system is meant to give gains to some companies that can work within their allowances, but John would you like to say a bit more about going into the market and paying for allowances?

Mr McElroy: The situation in 2005 was that the electricity sector had to buy somewhere around 36 million tonnes of CO_2 allowances in the market, given the shortfall in allocation versus emissions. If you assume an average allowance price through 2005 of about €20 per tonne, that effectively cost the industry around £500 million. I think the other thing to say, as David has mentioned, is the £800 million figure which was in the DTI report was very much based on the assumption that there was full pass through. It was very much a worst case. The simple fact of the matter is that the way the electricity market works, generators tend to contract their output up to two years ahead, and if you look at the expectation on CO_2 allowance prices that the market had in 2004, it was typically in the range €5 to €10 per tonne, compared with the outturn in the market, which was in the range of €15 to €30 per tonne in the first year. So I think there are a range of factors which would suggest that the market was not fully able to pass that £800 million through. I think the other point to note is that of course allowance prices have fallen substantially over the last year and we are now at an allowance price of around €8 per tonne so clearly the potential for gain is considerably reduced from the figure that was quoted in the report by IPA Consulting.

Q104 Colin Challen: I will read the transcript because I am not sure I am getting everything with this bell going on. Am I to understand that we should organise a whip round for these power companies because you are actually out of pocket and the DTI's figures were completely wrong and you are not having a windfall at all?

Mr McElroy: I think it is important to recognise that there may be an element of gain but the Emissions Trading Scheme is supposed to benefit certain parties; that is the whole point of the design. There is a big distributional impact in terms of how any gains might be spread across the sector which would depend on the allocation to particular players. It will also depend on their fuel mix. If you recognise that gas plant—combined cycle gas turbines—were setting the marginal price in the electricity market through almost all of 2005, then the potential was only to pass the level of carbon through to the market emitted by combined cycle gas turbine plant. Emissions from coal plant were very much higher, so coal plant was significantly disadvantaged in that market in terms of any ability to pass through carbon costs, so it is a very complex picture and it has got to be considered in terms of individual players and not just the market as a whole.

Q105 Colin Challen: It is complex but can we get one or two simple conclusions out of this part of the discussion. For example, has any profit been generated and has that profit, as some power companies have claimed, been used to provide cleaner plant and therefore lower carbon emissions?

Mr Porter: There is one simple condition that we must not lose sight of and that is that the UK's electricity companies work in an intensely competitive market-place. The largest ones of them have retail businesses and those retail businesses depend for their very existence on having very large numbers of customers. The UK customers of electricity are more sophisticated today and they know that they can switch between suppliers. Around 50% of them have a record of having done that. Companies can lose customers if they pass on price increases and get it wrong, and they hate doing that. They depend in their retail businesses on having very high levels of customer base, and upsetting the customers through price increases is not something that they want to do. As for investing in new plant, that is coming but it could not come at the beginning of the EU ETS. The industry wants to invest in new plant. It knows it has got to have cleaner, greener plant and it knows that it is facing a bill, as I said before, of roughly £20 billion for doing that. But in the early stages of the EU ETS there was really no possibility that anybody could build new plant to respond to the allowances. In fact, today they are looking for the Government and the EU to give them a clear indication well beyond 2012 of what the allowances are likely to be so that they can make those investment decisions and deliver cleaner, greener electricity for the EU.

Q106 Colin Challen: If the price of allowances goes down, does the price of electricity also go down?

Mr Porter: That does not necessarily follow because there are several things that a generating company has to keep an eye on virtually every hour of the day. It has to have an eye on demand and what it is contracted to do. It has to have an eye on fuel prices, which in the last few years have been extremely volatile, and it also has to watch the carbon price. There is quite a complex, dynamic relationship between these things and if somehow fuel prices went down but the carbon price went up, you may not necessarily see a response in the price to customers. John or Andy, would you like to add anything?

Mr McElroy: Ultimately, in the balancing market, in the short-term market you would expect to see the price of allowances factored into the market. If the market was not doing that, then emissions trading would have completely failed to deliver. The fact is that not all electricity is sold through the balancing market, a lot of it is sold in the contract market, and there are dynamics in terms of how the market responds to price signals in particular segments. It is a complex issue but, generally speaking, ultimately

you would expect to see changes in various price influences reflected in the price of electricity, however it is not necessarily an immediate response.

Q107 Dr Turner: Can I just butt in on this before we leave the money, because I am not personally satisfied with Mr Porter's answers. He has danced very nimbly around the issue and done everything except answer the original question, because it almost beggars belief that by this stage the industry does not know, pretty accurately, how much extra profit, assuming it made an extra profit, it made overall during the first year, during which I think it is probably safe to assume—and you can correct me if I am wrong—that the industry's emissions did not fall by one tonne. Am I correct? Can you give me that figure because I just do not believe that you do not have it.
Mr Porter: Can we deal with the emissions question first.
Mr McElroy: Emissions, as we know, were relatively flat between 2004 and 2005. In fact, they have been relatively flat since 2003 so, yes, there was no change in emissions as such in 2005, but then, equally, one has to recognise that if you look at gas prices during that period the level of the carbon allowance price was not sufficient to drive coal to gas switching, so essentially on that basis there was no signal in terms of driving a short-term response. Generators have been investing significantly in efficiency improvements and those will flow through to the market over the next few years. We do not have a long-term price signal to drive investment at scale.
Mr Porter: And as for what profits are made by the industry, of course there is not a single figure for profit for the electricity generating industry. Different companies have different results.

Q108 Dr Turner: I am sure somebody adds it up.
Mr McElroy: Can I just say that it is important to recognise the structure of the industry. Price flows through to the customer via a chain and it is very hard to say, if there are any gains, how they are actually distributed across that chain. The ability to pass costs through in the domestic sector has been driven much more by rising fuel prices than it has by the carbon price and therefore estimating what the element of carbon in that might be is extremely difficult. It is not a straightforward question to answer.

Q109 Joan Walley: I just want to press you a little bit further on this. You did not talk about a windfall tax but your face suggests there has been an element of gain. I would like to ask you where that element of gain has come from because it seems to me that it has come from carbon allowances which you had which you did not actually pay for, so is it not slightly bizarre that you have got this element of gain on the back of the carbon allowances which were there for free?
Mr Porter: It starts with restricting the emissions of carbon. Until January 2005 that did not happen. Once that kicks in, companies have to respond and it costs them money to respond to that. That cost finds its way through to the electricity price.

Q110 Joan Walley: But you receive the bulk of those allowances for free.
Mr Porter: Yes, we cannot help that.
Mr McElroy: That was the intent of the design of the scheme. The intent of the design of the scheme was to recognise that there was no price of carbon in 2004; there was a price of carbon in 2005, and the free allocation was to compensate for the fact that for the people who had invested in the industry up to that point without any carbon price, their assets had been written down in value. We did not design the scheme; that is the European Directive.

Q111 Joan Walley: So are you saying that the scheme was to compensate those who had invested who now had less value in their assets?
Mr McElroy: That was part of the reasoning behind the basis for free allocation.

Q112 Joan Walley: And am I right in thinking that the value to the industry was in the region of £850 million?
Mr McElroy: That is the maximum that the industry could have gained by, had it been able to pass the full opportunity cost through to the market but, as I think we have explained, there were a lot of reasons as to why that may not have happened.

Q113 Chairman: On that point, even if you disagree with the DTI figure, the Carbon Trust have estimated a figure of £677 million. Do you disagree with that figure as well?
Mr McElroy: They are in the same ball-park. I would not disagree with the DTI's figure of £800 million as the maximum possible that could be passed through to the market, and I think that is actually what the IPA Consulting report said—it said it was the maximum; it did not actually say it was the number.

Q114 Joan Walley: What is your figure?
Mr Porter: We do not come up with a figure.
Joan Walley: You do not have one.
Chairman: This might be a good point to go on to auctions.

Q115 Colin Challen: Will you ever come up with a figure or is it something that you want to avoid at all costs?
Mr Porter: It is not something that is going to help us in delivering cleaner, greener electricity through the EU ETS.

Q116 Colin Challen: It will help policy-makers decide how to structure things. We are going to come on to the auctioning aspect, but do you not agree that this is just a hole in your analysis which needs to be filled? How do we design these schemes if you cannot even produce these basic figures? It is

massively complex but surely if the DTI can come up with figures and you do not agree with them, it is because you have got your figures somewhere? If you have not got your figures, we will assume that the DTI figures are correct.

Mr Porter: We have already said, Chairman, that we are not disagreeing with the figures that went to the DTI in the IPA report. What we are questioning is whether that was a worst case. A lot of guesswork went into that. The point for the future is that the scheme had to be started in a way where it would actually work and get off the ground. It needs to be improved and there are measures coming now which will improve it. We are going to see something come in tomorrow. Probably we are going to hear an announcement from the European Commission to the effect that in Phase 2 they want to see a number of countries tighten up on the cap that they are applying, on the allowances that they are giving, and over time the scheme is going to become more refined and more effective; in fact, it has to.

Q117 Colin Challen: What impact will auctioning have on your members?

Mr Porter: I think the most important thing to us is what is the cap on allowances and how much do we have to buy in the way of allowances, but for a more detailed comment on auctioning, I will hand over to John.

Mr McElroy: The position in the UK Phase 2 NAP is that the Government has decided to auction 7% of allowances. All of that will be taken from the allocation to the electricity sector so it equates to around 15% of the allocation to the electricity sector. That is around 17 million tonnes of CO_2 allowances per year. Obviously the impact of that will be that the electricity sector will either have to reduce emissions by fuel switching or bringing forward investment. Again that can only happen towards the tail end of the phase, or go out and buy allowances in the market. So it will increase the cost of compliance to the electricity sector in Phase 2. Our view at the moment is that incumbent generators have been allocated around 100 million tonnes of CO_2 allowances in Phase 2 against a need of around 165 million tonnes, so the electricity sector will be significantly short of allowances in Phase 2 of the scheme.

Q118 Colin Challen: What effect will that have on electricity prices?

Mr McElroy: Again that depends on the price of carbon in the market, which is set at European level, so it will depend on the decisions that the Commission makes and ultimately how it deals with the other national allocation plans which it has still got to consider and how short, ultimately, the market is of CO_2 allowances. At the moment it is impossible to speculate what the price of CO_2 will be in Phase 2. The market at the moment is trading in 2008 at around 18 euros per tonne of CO_2. The issue is whether the Commission's actions will drive that price up or whether it will fall. We are all sitting with interest to see what happens. We want a scheme that works and we want to see the Commission actually exercise some muscle in ramping down caps in Europe to make certain that we put the scheme on a sound footing to move through to hopefully something which is much more efficient and transparent in Phase 3.

Mr Porter: There is another aspect of auctioning that we are interested in and that is where the money goes, and at the moment it appears that it goes straight to the Treasury, but what they are intending to do with it is still unclear. It may be used for public purposes generally but we would be sensitive to the use of that money within our industry. There are good and bad ways in which it could be used.

Q119 Colin Challen: The Government has talked about an Environmental Transformation Fund as a possibility. Are you saying that you really want to see this money, if you like, hypothecated for an environmental good? What sort of thing would you like to see it spent on?

Mr Porter: It is not clear how much is going into the Environmental Transformation Fund. John, would you like to comment on the good and bad.

Mr McElroy: In terms of the good and bad, our key concern is that auctioning is often seen as the panacea for emissions trading and it is the way in which it deals with all harmonisation issues and level playing fields, et cetera, et cetera. However, it is interesting to note that the Commission's review is totally silent on the use of auctioning revenues. Any consultation that has been carried out by the UK Government has also been totally silent on the use of auctioning revenues, but potentially if those auctioning revenues are used in a way which helps bring low-carbon technologies to the market-place, that would certainly seem to be a good way to move forward. Our real concern in wanting a robust carbon market is that it is not used to distort the market or be seen to support particular industries in the market. There is the potential for auctioning to result in just as distorted a market as free allocation is perceived to lead to.

Q120 Colin Challen: The proportion to be auctioned in Phase 2 is 7%. Do you have any thoughts about Phase 3 and what proportion of allowances should be auctioned in that phase?

Mr McElroy: I think that is an extremely difficult issue because, ultimately, I think we recognise that the whole point of emissions trading is to internalise the cost of carbon. That is what it is all about, if it is going to work. However, the simple fact of the matter is that Europe cannot act in isolation. There are significant issues in terms of international competition which are associated with auctioning, and I know that other witnesses will be much more able to speak about that than we are. Equally, there are issues regarding security and diversity of energy supplies. Those all have to be taken into account in deciding how you want to move to auctioning and the rate at which you want to move. I think it is important that we see some sort of consensus across Europe about the rate of that transition and that it is managed in a sensible way which has to recognise the competition and security of supply aspects.

Q121 Chairman: I put it to you that it is an extremely simple issue as far as the electricity industry is concerned. The only way we are going to drive forward a sustainable power price and incentivise investment by the industry in lower carbon electricity generation is to move as quickly as possible to 100% auctions across the whole of Europe.

Mr McElroy: I actually disagree with that for fundamental economic reasons. It is the scarcity of allowances which drives the market and which drives investment, not the method of allocation. The method of allocation is all about winners and losers. If you talk to economists they will tell you that it is through the cap on the scheme and making certain that we have an efficient and liquid market where all parties are engaged in that market that we will deliver those emission reductions at least cost. The method of allocation is second order in terms of the objectives of the Emissions Trading Scheme.

Chairman: On the contrary, because 100% auctioning effectively puts a zero allocation and is rather a good way of driving the price forward. Anyway, Desmond?

Q122 Dr Turner: You are concerned with the post-2012 period and you want a phase after that lasts at least 15 years—this presumably does not have to be a single phase; it could be stepping up as it goes along—because you are concerned that any plant that is already there is going to be running for 40 years, so you want a stable platform. What do you think needs to happen to ensure that the ETS mechanism incentivises investment in lower carbon infrastructure? Is it simply a question of drastically lowering the cap?

Mr Porter: The cap has to come down, but the most important thing, apart from what level the cap is set at, is seeing what we are calling a trajectory that goes well into the future that all the participants can understand and believe in. The absence of that at the moment is quite serious for the industry. If you were to be contemplating building a new power station today in the UK, you would be looking at it—if it were something reasonably straightforward and you could get planning consent, which is a question for another select committee I think—beginning to produce electricity probably in 2010. At the moment as you sit down to make your investment plans, you have absolutely no idea whatsoever what your CO_2 emissions allowances are going to be beyond 2012. Your investment timescale for your new power station, however, will run probably over a period of 15 years and you will be expecting it to have a life of a great deal more than that. Some of our stations still running today are 30 or 40 years old. This mismatch is a cause of quite a bit of uncertainty and increase in business risks at the moment. The Government recognises it and we have had discussions with them in the course of the Energy Review, but the problem is that this is a European scheme and to get an effective solution you have got to get the countries of the European Union around the table to agree on something and the pressure is on; they need to be doing that as quickly as possible.

Q123 Dr Turner: You still seem to be thinking in the old CEGB mindset of chunks of power station and half a gigawatt here or a gigawatt there. If we are looking to a much more renewable future, it is not going to be like, is it, it is going to distributed maybe 50, 100 or 200, at most, in various places? It is a quite different mindset and a quite different approach, which is possibly quite desirable. Well, it is very desirable from the environmental point of view. What do you think the ETS can deliver to encourage that?

Mr Porter: I do not think that the ETS at the moment has a very big influence on the type of power station, whether it is small or large. As the renewables sector in the UK grows, given certain regulatory conditions, we may well see large-scale renewables offshore and marine technologies so they may not all be small and widely distributed.

Q124 Dr Turner: That is my point exactly. But how can you change the ETS to encourage that?

Mr McElroy: I have to say that the design of the Emissions Trading Scheme is not about picking technologies; it is about providing an efficient market to drive investment. It will be other policy instruments which sit alongside the Emissions Trading Scheme which will influence whether particular technologies come to the market or not, as well as the fundamental issue of economics. I think our concern is that the EU ETS should not be used as a market for picking winners. It is supposed to drive emissions reductions at least cost.

Q125 Mr Caton: Following on from Dr Turner's question, you mentioned the Energy Review and of course in that the Government describes the EU ETS as "the central element of the UK's emissions reductions policy framework". How well do you think the Government's strategy on climate change and its energy security strategy are working together and can the EU ETS deliver them both?

Mr Porter: That is a good point and from our position we want the EU ETS to be the main driver. We want to stick with it. People have criticised it in its first two years, but we still see it as valuable and the instrument that we want the politicians to have faith in. The reasons for that are fairly simple. One is that it is about cap and trade and the cap actually ensures that you reduce your emissions, and the trade ensures that within that cap that you deliver it efficiently. We are in the very early stages of the scheme at the moment and if it can be extended long term and people have faith in it, it can be a major instrument of dealing with climate change in Europe. John, would you like to add anything?

Mr McElroy: Absolutely in the sense that getting a long-term carbon price signal is fundamental to delivering both climate change policy and delivering energy policy but, equally, one of the concerns is that if there is a wider energy policy vacuum it may tend to narrow the range of technologies in the market, which could impact on security of supply. Sitting alongside EU ETS I think the whole area of research and development and demonstration of emerging technologies is just as important in terms of

delivering the range of technologies that we might want to see participating in the Emissions Trading Scheme in the longer term. Generators at the moment are developing the options—there are clean coal options for carbon capture and storage being developed, there are marine options being developed, there are offshore wind options, a range of things are there—but, quite honestly, at the moment generators are saying, "We will take these options forward but we cannot take decisions about where we are going to go until we know what the policy framework decision is post-2012," but we are not sitting back and doing nothing.

Q126 Tim Farron: Looking again at fuel switching, in your memo you say Phase 1 allowance prices do not provide sufficient incentive for generators to switch from coal to gas. What level would allowances need to be at to provide the necessary incentive?
Mr Porter: That is a good question but, of course, it is not an easy one to answer because you have got three things to consider. You are looking at demand; you are looking at the fuel price; and you are looking at the carbon price, and the relationship between, for example, the price of gas and the price of coal is very significant. You could have circumstances where it might be necessary for the carbon price to be double anything that we have seen so far before anybody would switch, but in other circumstances there could be reasons for a generating company to switch, even if the price was perhaps zero euros per tonne. It is a difficult question to answer because of the dynamics.
Mr McElroy: The simple fact is that in the first year of the trading scheme for a large part of the time you would have needed to have seen allowance prices of €40 or even €60 per tonne to drive switching. The peak in the allowance price was around €30 per tonne and the average was around €20. The fact is that the difference between coal and gas prices is driven very strongly by the demand for gas, which shows seasonal impacts. Gas prices tend to be highest in the winter and lowest in the summer and they can vary sharply from day-to-day or even hour-to-hour. So whilst the market initially in the first six months seemed to be showing some correlation between carbon price and the annual average cost of switching, the short-term carbon allowance price was not reflecting short-term movements in gas price, so the price was never really sufficient to deliver anything other than a relatively small amount of switching in the first year.

Q127 Tim Farron: Moving on a little bit, what would be the impact, in your view, of carbon reductions in the UK if carbon allowances did incentivise that kind of switch?
Mr Porter: You still have to take account of fuel prices and customers' demand and the time of year and so on, but broadly, I suppose it is fair to say, the higher the carbon price the greater the movement over time towards lower carbon technologies. However, I have to be very cautious with the answer because it is not just a question of the carbon price. A great deal is expected of the electricity industry and included in the expectations are things like keeping prices as competitive as they can be and, just as important as that, keeping the lights on.

Q128 Dr Turner: What is the physical potential in terms of the existing plant in the UK?
Mr McElroy: It is determined by the capacities of the relative technologies.

Q129 Dr Turner: You know how much coal plant there is and how much gas plant there is; you must be able to do that calculation.
Mr McElroy: But the other factor you have got to put in there is demand because ultimately the demand has got to be met and that will ultimately determine the amount of switching that you can do because you can only switch on the slack capacity, the marginal capacity. Yes, we could give you some idea of the switching potential and come back to you on that.
Dr Turner: That would be very helpful.
Chairman: That has been quite a helpful and certainly a revealing session. We are grateful to you for coming in and we have managed to wind up just on the dot of five past 11.

Memorandum submitted by EEF

Introduction

1. EEF is the representative voice of manufacturing, engineering and technology-based businesses with a membership of 6,000 companies employing around 800,000 people. Comprising 11 regional EEF Associations, the Engineering Construction Industries Association (ECIA) and UK Steel, EEF is one of the leading providers of business services in employment relations and employment law, health, safety and environment, manufacturing performance, education, training and skills. UK Steel, the trade association for the steel industry, is a division within EEF, and therefore the submission draws heavily on the experiences of that sector.

2. Manufacturing supports attempts to tackle climate change by reductions in emissions, and the sector has already contributed substantially to the UK's efforts in this area. However, while EEF is committed to emissions reductions, we believe it remains of paramount importance to ensure that such initiatives do not become harmful to the competitiveness of industry to the extent that there may result an exporting of the emissions problem to less regulatory environments.

3. We welcome this inquiry, as it is clear that there are a number of lessons to learn from Phase I of the EU Emissions Trading Scheme (ETS). However, we are also concerned that, in some respects, the inquiry comes too late to apply the lessons to Phase II. The draft National Allocation Plan (NAP) has already been submitted to the European Commission in August 2006, and DTI and DEFRA have been categorical that there is no further opportunity to consult on changes to policy decisions concerning Phase II.

4. As not all of the questions posed by the committee are of direct relevance to EEF, we have answered those on which we feel we have our experience will contribute to the debate.

The EU Emissions Trading Scheme: Lessons from Phase I

Q1. *What are the key lessons to learn from Phase I of the scheme?*

5. As it is only the first year of a three year phase, it is difficult to assess the full impact of both the competitiveness of manufacturing and its effectiveness as a tool to reduce CO_2. However, there are still some lessons that can, and should, be learnt.

6. One of our major areas of concern has been the ability of power generators to pass on the costs of emissions trading to all sectors of the economy through higher energy prices. The result has been windfall profits for power generators, and a higher burden of energy costs to industry. In a globally competitive market place, companies find it difficult to pass on the cost of CO_2 to their customers. As a result—in order to retain customers—many manufacturing companies are simply obliged to absorb these higher energy costs, and will suffer a competitive disadvantage as a result.

7. First year reporting of the scheme would appear to have given industry—and specifically the steel sector—an over allocation of allowances. However, in reality this has not been the case. Production in the steel sector fell in 2005 as a result of a temporary deterioration in market conditions. It is only the first year of trading and differences and improvements in the way emissions are monitored and reported have all contributed to this apparent over allocation. These factors all reflect the inadequacies of the current allocation methodology which we discuss in more detail throughout this submission.

8. EEF feel that the allocation methodology is oversimplified: allocating on historic emissions and forecasting over long periods is bound to be inaccurate and creates winners and losers. The inevitable inaccuracies and oversimplification has undoubtedly reduced the administrative burden for government departments but has at the same time created inequalities within the system.

9. The DTI has insisted that all sectors should be treated the same. However we believe that this approach has also created inequalities within the system because it does not take into account different operational environments. This is particularly the case with the benchmarking approach that has been adopted in Phase II. It has treated each sector the same despite quite distinctly different ways of operating. (In reality, ensuring that all players within a sector are able to compete on an equal footing is more important than creating identical treatment between sectors). It also creates a barrier to investment and implementing practices that could lead to more efficient and less CO_2 intensive production techniques.

10. The timetable of the scheme has been too tight. The sheer number of consultations with sometimes unrealistically tight deadlines as well as the implementation of the requirements of the scheme has created massive resourcing issues for those expected to engage in the process.

11. Government departments rely heavily on consultants to inform them of key aspects of a sectors performance and operational practices. Unfortunately, we feel that there has been some questionable advice provided by consultants to the government. Many industrial experts have disputed the accuracy of the information that the government have relied upon to make key policy decisions. Considerable efforts have been devoted to arguing the corner for industry with government officials, partly as a result of some of this work done by consultants. This has also lead to a question mark over the degree of trust in the relationship between government and industry representatives.

12. Reliance on a "cap and trade" system to reduce emissions will require companies to choose one of three options: either to buy CO_2 credits; to invest in new technology that will reduce CO_2; or cut production. Cap and trade relies on the market to help deliver reductions where abatement of carbon production is cost effective. For energy intensive industries—where cost effective abatement potential is a less available option—this means purchasing CO_2 allocations or even cutting production. This inevitably introduces distortions: and EEF would argue that any cap and trade system needs to introduce a level of sophistication that links the cap to abatement potential and technology. Some form of cap is necessary to give a signal to investors; but it must also be recognised that investment in emissions reduction technology in capital intensive sectors may be slow to filter through.

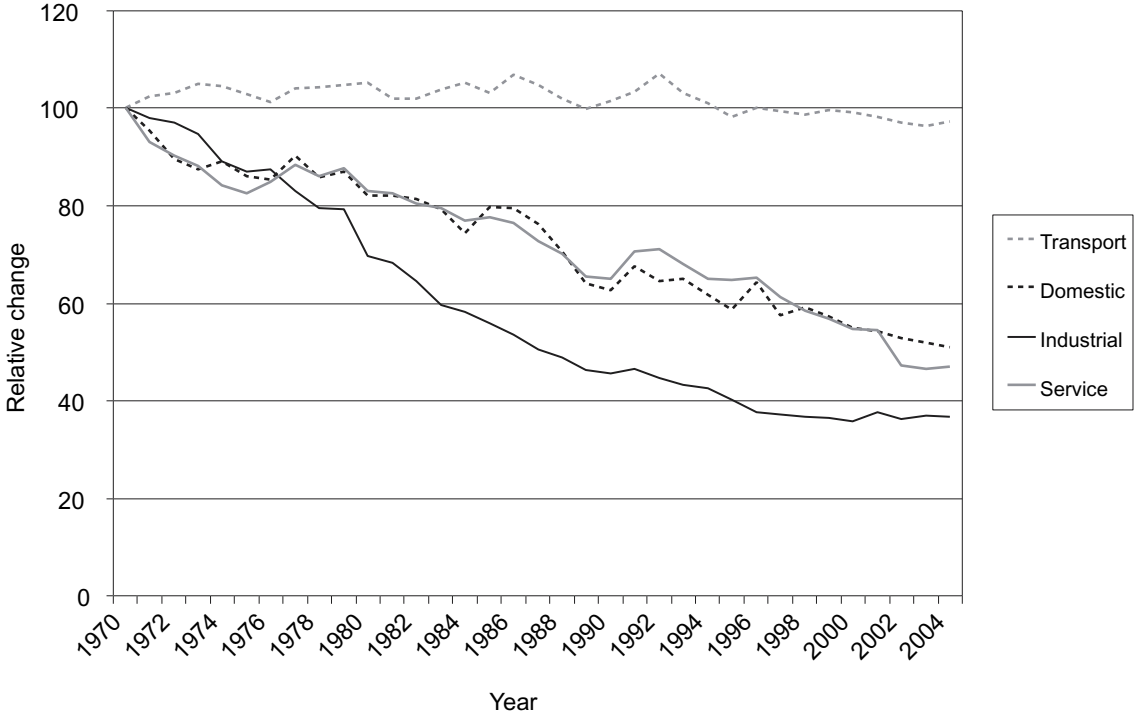
To overcome some of the inequalities, address the distortions and encourage CO2 reductions we believe that serious amendments need to be made to the scheme and the Green House Gas (GHG) Emissions Trading Directive. An alternative to the Cap & Trade should be seriously considered with ex-post adjustment.

Q2. *How likely is it that UK firms would successfully reduce emissions by at least 7MtC by 2012 in line with the proposed Phase II Nap*

13. The purpose of the EU ETS is to realise reductions of emissions at the lowest cost, so that it is more financially rewarding to improve energy efficiency and lower CO_2 emissions than it is to buy CO_2 or face higher energy costs. The scheme captures energy intensive users and these have tended to have already achieved significant gains in energy efficiency. Further reductions in CO_2 tend to require significant investment or a step change in technology to deliver any further improvements. Figure 1 illustrates the decoupling of economic output from energy use from 1970 to 2004 for all sectors except transport. Note that the industrial sector appears to have levelled off since the mid 1990s. One of the reasons for this is the diminishing returns to energy efficiency in some industries, particularly in energy intensive manufacturing such as steel.

Figure 1 Energy efficiency gains in industry levelling off

INDEX OF ENERGY INTENSITY (ENERGY USE PER UNIT OF OUTPUT) 1970 = 100

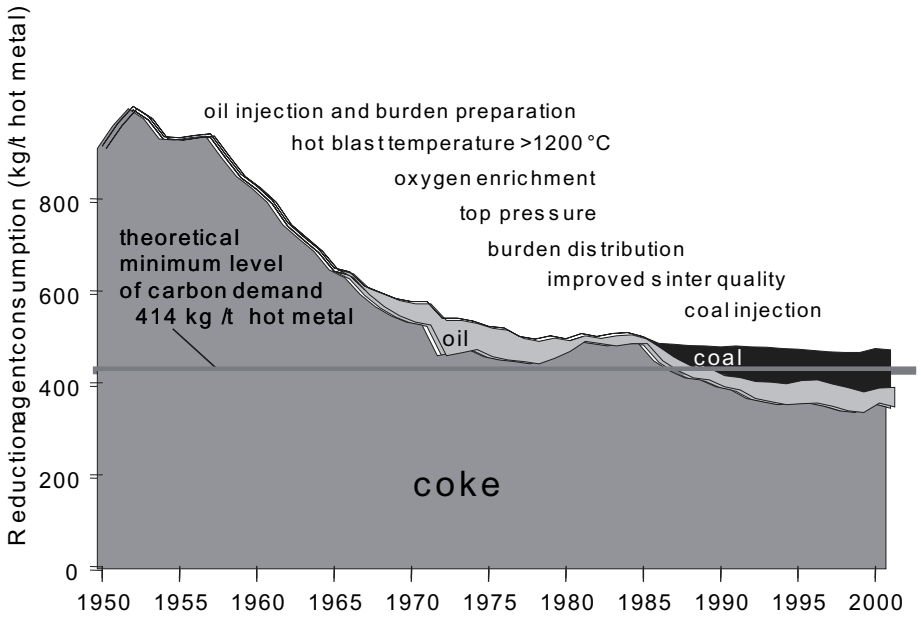


Source: Building Research Establishment, Department for Environment, Food and Rural Affairs, Office of National Statistics and DTI.

14. Figure 2 illustrates how the steel industry is close to hitting the theoretical minimum in the amount of carbon (414 kg/tonne of hot metal) required to produce a tonne of hot steel in a blast furnace, unless we see a major technological breakthrough.

Figure 2 Steel industry hits theoretical limits

KG/T HOT METAL IN INTEGRATED STEEL PROCESSES



Source: Thyssen Krupp.

15. What this indicates is that many energy intensive processes have been implementing energy efficiency measures for sometime. Further significant reductions of CO_2 emissions will require more complex and costly solutions. This may include further R&D or investment in large projects like cogeneration and in some instances only a step change in technology will deliver gains in energy efficiency and faster reductions in carbon emissions. Therefore the only alternative in this environment will be to displace carbon emissions through trading, and not reductions of carbon as is desired.

Q3. *What have been the effects of the method chosen for allocating allowances in Phase I?*

16. To reduce the administrative burden for government departments and meet the very tight timetable for delivery of the NAP to the Commission, oversimplification and a consistent approach has been applied. The outcome, as has already been highlighted, has been to create winners and losers and an approach that has resulted in inequalities. Other issues include:

— Forecasting emissions. Future predictions of industry emissions have formed the basis for the scheme. The Phase I period covers 2005–07 and the forecast for energy use had to be finalised before the NAP was submitted to the Commission during 2004. Similarly Phase II (2008–12) required a forecast for energy use in 2006—almost six years in advance of the final year of the phase. Clearly, it is very difficult to predict output so far in advance, especially when government predictions vary substantially from those of the industry. This approach will never be accurate and will inevitably lead to situations of over and under allocation—"winners and losers". The impact on the loser will be determined by their ability to pass on the cost of the CO_2 they will be forced to purchase as a result.

— Grandfathering: A bottom up approach is also factored into the allocation methodology where installations take the emissions from a period in the past known as the baseline years (2003–04 in Phase II). Together with the projections, the allocation is worked out. If during the baseline years a company's output was lower then this will lower their allocation. In the steel sector we are aware of companies that were in periods of bankruptcy during the baseline years, and as a result their output was particularly low. This has significantly lowered their allocation as a result, causing substantial difficulties now the companies are out of financial difficulty. Ideally, the scheme should have taken this into account and that it why forecasting is used as the mechanism for addressing the potential under allocation. However, it is clear that the government is determined to not over-allocate at all costs, and are seeking guarantees that projections from companies will occur as predicted. Clearly, this guarantee can never be given.

— Sector to installation allocation: The sector forecast is aggregated and then proportionally distributed between the installations according to their share of the sector emissions. This again can create winners and losers. An example of this is the steel sector. One company in this sector

dominates, so clearly their projections dominate the sector aggregate. This has led to companies within the sector with higher projections receiving significantly lower allocations (up to 70% lower than required) because proportionally they occupy a much smaller share of the sector.

— Benchmarking approach: The benchmarking approach for Phase II has taken an average approach comparing emissions from one plant to another, taking an average and then applying across the sector. Again this is oversimplification and does not reflect the reality. For example, in the steel sector high quality steels which are more carbon intensive were compared with lower quality, less carbon intensive steels and an average derived and applied to the whole sector. This has resulted in one part of the sector subsidising the others allocations where both operate in completely different markets. Although this particular example has been partly resolved the average approach is still adopted for other aspects of benchmarking resulting in similar outcomes.

Q4. *Has the Government identified the correct proportion of allowances to be auctioned in Phase 2? Should these be drawn solely from the power sector's allocation? What will the effect of this auctioning be on industry and the price of carbon?*

17. We recognise that auctioning of allowances might be the most economically efficient and environmentally effective way of distributing allowances to the electricity generating sectors, and to any other such sector that is able to pass the costs on to its customers as a result of not being subject to international competition. However, obliging sectors who are subject to international competition to purchase allowances relating to the entirety of their emissions would simply impose an additional, unrecoverable cost burden on companies. It would be unlikely to yield any additional environmental benefits compared to the current system, because it would be unrelated to the abatement potential of companies. It would put companies at a severe competitive disadvantage and encourage imports from countries not covered by the scheme. Given that industry is currently subject to high energy prices and the pass through costs of carbon, we are concerned about the impact that this will have on manufacturing, and particularly energy intensive users.

18. UK Steel, with some of its members, will be undertaking some analysis on the impacts that the pass through cost has had on the sector in Phase 1. We will be happy to share these findings with the committee as and when this research is completed.

Q5. *What have been the effects of Phase 1 so far on the competitiveness of (1) business in the UK and (2) business in across the EU*

19. It is too early to draw any concrete conclusions as to the impact on competitiveness.

Q6. *What are the key issues for Phase II in terms of ensuring that emissions reductions from EU States are not cancelled out by transferring of industry to developing economies?*

20. In the short term it is important that efforts are made to address the oversimplified approach that has led to inequalities within the sectors. However, due to the tight timetable, it is now difficult to address the key issues in time for Phase 2. Going forward into Phase 3, we believe it is essential that the price of carbon fully reflects the operational realities within sectors and so fully demonstrates the abatement potential. This requires a move away from the cap and trade model for those sectors subject to international competition. Detailed energy efficiency benchmarks could be established and regularly reviewed within sectoral agreements. At the end of each accounting period an ex-post adjustment would then be undertaken that, on the one hand penalises companies that had performed worse than the benchmark, but on the other rewards companies that performed better than average. There are a number of variants to this proposal that can be considered, but the essential element is that the "accounting" takes place in response to actual performance against energy efficiency benchmarks. Thus, this removes the need for both government-imposed allocations and auctioning, thereby safeguards the competitiveness of the sectors as a whole.

Q8. *How should aviation be included with the ETS. What are the latest indications that it will be included*

21. It is believed that the Commission will be drafting legislation by mid-2007 that will allow for aviation to be included within the EU ETS. This is of concern since there appears to be little potential to abate the emissions from aviation. Essentially this means that the sector will only meet its targets by buying carbon to make up the shortfall. This could push up the price of carbon which sectors like steel—with little abatement potential and limited ability to pass on the cost—will have no alternative but to absorb. This clearly will have dramatic implications on business competitiveness.

22. A report published by ICF[1] supports the inclusion of aviation but in its assessment of the impact, it quotes carbon prices as €21, when we have in reality seen higher prices than this. It also relies on large amounts of assigned amounts units (AAU) carbon credits becoming available from Russia for aviation to purchase to meet their targets. If these do not become available the cost of carbon will inevitably increase increasing potential problems already experienced within the scheme.

[1] Including Aviation into the EU ETS: Impact on EU Allowance Prices (Final Report)—ICF Consulting for DEFRA and DfT (1 February 2006).

Q11. *What work needs to be done now to help design a third phase?*

23. It is clear that officials and industry need to work together to address the problems and work out solutions together. The Nairobi COP12/MOP2 will be discussing the post 2012 agenda and we believe that government and industry should have engaged prior to this so that the meeting could have been approached informed with the views of all stakeholders. The GHG Emissions Directive is currently under review and it is essential that the review gives time to allow for developments that may come out of the COP12/MOP2 and discussions around alternative arrangements.

Conclusions

24. EEF feels that there are a range of lessons that can be learnt from Phase I of the EU ETS. We have aimed to raise most of these within this submission. We feel that more can be done to ensure that emissions are reduced while simultaneously not damaging the economic competitiveness of manufacturing.

October 2006

Memorandum submitted by the TUC

A TUC Submission on Behalf of Trade Union Members of TUSDAC, the Trade Union Sustainable Development Advisory Committee

TUSDAC is a joint TUC/union/DEFRA body chaired by Paul Noon, a member of the TUC General Council and General Secretary of Prospect, and Ian Pearson, Minister for Climate Change & Environment. It was set up in 1998 as the main forum for consultation between Government and Trade Unions on sustainable development and environmental issues.

Introduction

We welcome the opportunity to comment on the operational aspects of the ETS, and possible extensions of the scheme to new sectors, including aviation. At present, the overall goal of the EU ETS is to reduce emissions from the sectors it covers by 8% on 1990 levels. Covering around 46% of Europe's total CO_2 emissions, the EU ETS is of crucial importance in ensuring that the UK and our EU partners reach at least our Kyoto commitments.

1. *What are the key lessons to learn from Phase I of the Scheme?*

Stakeholder Engagement

As a general observation, we would reiterate the case for a more coherent sense of stakeholder engagement in the ETS at national and sectoral level. Significant investment, workforce planning and skills issues are involved in the implementation of the ETS. We would urge the EAC to consider how industry engagement in the ETS—both unions and employers—can be developed on a partnership basis.

Operational Issues

While supporting the ETS in principle, we would highlight two key operational concerns:

- **The low carbon price achieved so far within the scheme.** Currently (late September 2006) the price of carbon has fallen to a three-month low, hovering at just under €15/tonne. Commentators have suggested that an estimated 65 million tonnes of surplus allowances in Phase I across the EU has been a key factor in the weak market price of carbon.
- **The lack of long-term policy clarity beyond 2012.** There is an urgent need for greater clarity and certainty about carbon pricing over the longer term ie beyond 2012. Investors require long time frames on which to base investment decisions in low carbon technologies, particularly the capital-intensive investment involved in new power plant and a carbon capture and storage (CCS) network.

Minimum industry prices of around 20 to 40 euros a tonne are required over long periods.

Whilst we understand from company reports that one effect of ETS Phase I has been to stimulate certain energy efficiency measures, these benefits have been masked by the impact on energy intensive industries of the recent upsurge in energy prices, both gas and electricity. The TUC is aware of widespread reports of cuts in investment, production and jobs. The TUC recognises Government efforts to address these security of supply issues, for example, through industry consultations with the BEF. But to work effectively the carbon market now emerging through the ETS requires a relatively stable energy price framework, which means addressing energy supply issues.

Decisions on investment in CO_2 abatement technology have to be made in the light of a highly uncertain market price for carbon, and at a time when the future details of the ETS for the long run are still very sketchy.

There is a further issue to be considered in relation to the treatment of the nuclear generation sector, in that, along with renewables, its near-zero emissions profile argues for their continued exclusion from the EU ETS.

2. *How likely is it that UK firms would successfully reduce emissions by at least 7MtC by 2012, in line with the proposed Phase II NAP?*

2.1 Investment in clean coal technology

The result of the Government's draft regulations for EU ETS Phase 2 will be investment in gas by default. The TUC believes that a major opportunity is being missed to promote clean coal allied to carbon capture & storage.

Matters concerning the price of carbon and long-term policy certainty are particularly relevant to the case of investment in clean coal technology, including carbon capture and storage. The EU ETS is based upon a progressive tightening of carbon allowances, which will generate a market price for such allowances with the objective of stimulating investment in lower carbon technologies at minimum cost.

As noted earlier, the short time phase to 2012 wont bring forward investment in new generating capacity to fill the emerging generation gap. Against this background, investors will elect to minimise risk and invest in gas because of its lower capital costs. These issues were highlighted in the recent report from the TUC's Clean Coal Task Group (CCTG) , *A Framework for Clean Coal in Britain* (copy attached) [not printed].

A Framework for Clean Coal in Britain notes that the German new entrant model has recently awarded allowances for up to 18 years and this has brought forward significant new investment in gas and, particularly, very much higher efficiency coal. A UK framework needs to incorporate a similar approach to ensure investment in a mix of new plant.

There are various options available to Member States under the Scheme's rules. An important lesson from Phase I is that, for Phase II, the UK selects options which, whilst supporting the principles of the Scheme, do not compromise the other objectives of the Energy White Paper. The UK's draft National Plan for Phase II proposes fuel and technology specific benchmarks for existing installations. However, the benchmark for new entrants is based on gas. On this basis, as the tables below indicate, new higher efficiency coal-fired plants will receive around one-third (38%) of the allowances they need, compared with around three-quarters (78%) for gas-fired plants.

The result will be investment in gas by default. By contrast, the German model is fuel and technology specific. The proposed UK approach also contradicts the purpose of the Scheme, which aims at promoting cleaner technologies and not cleaner fuels.

The impact of the ETS on the proposed Clean Coal investment is quantified below.

Excluding any allocated Allowances, power plants need to purchase allowances as follows (for 1,000 MW, load factor 85%, and CO_2 allowance price of 17 to 25 euros a tonne of CO_2:

	Specific Emissions g/kWh	*Annual Emissions mt CO_2/yr*	*Cost of Allowances Needed*
Existing coal	0.91	6.83	£116 million
Existing gas	0.41	3.02	£51 million
New Entrant clean coal (BAT)	0.75	5.58	£96 million
New Entrant clean gas (BAT)	0.36	2.71	£46 million

These costs are offset by the value of the free Allowances allocated under Phase 2 of the National Allocation Plan (NAP), leaving net cost of allowances to be purchased. Current proposals are:

	mt CO_2/yr	*Value of Allowances (@ £17 −25)*	*Net Cost of Allowances to be purchased*
Existing coal	4.07	£69 million	£47 million
Existing gas	2.09	£36 million	£15 million
New Entrants (coal)	2.11	£36 million	£60 million
New Entrants (gas)	2.11	£36 million	£10 million

These proposals clearly disadvantage investment in New Entrant clean coal power plant versus existing coal-fired plant or new gas plant.

The CCTG believe that ETS rules should encourage each fuel to be burned in the cleanest way possible, but for security of supply reasons should not be designed to encourage fuel switching. The TUC strongly supports the CCTG's proposal that New Entrants be allocated allowances based on the relevant best available technology (BAT) benchmark for each fuel and a high load factor, and that these allowances should be guaranteed for 14 years, as in Germany, as follows:

	Benchmark	*Load Factor*	*Allocation mt CO_2/yr*
New Entrant BAT Coal	750 g/kWh	85%	5.58
New Entrant BAT Gas	370 g/kWh	85%	2.77

This framework will create a positive incentive for investment in Clean Coal.

The investor will be left with the uncertainties of the price of gas, coal and CO_2 but nevertheless the CCTG believes that no further government subsidy should be needed, except for demonstration funding support for new technologies as proposed in the Carbon Abatement Technology (CAT) strategy.

Similar action in Germany, combined with long-term allocations, has already stimulated investment in clean coal power plants. This measure has the advantage that it can be implemented quickly without waiting for the results of the Treasury Review on CCS. Indeed, if the original proposal is implemented then a perverse disincentive for clean coal will be locked-in to the UK implementation of the ETS. However, to date the Government has been reluctant to move from its present position of ensuring that allocations to new installations are made against a best practice benchmark.

In response to representations from the TUC and others, *the Government has confirmed that its approach means that new gas fired power stations will receive a greater proportion of allowances compared to their emissions than new coal fired installations, because gas emits less CO_2.* The DTI argues that this is entirely in keeping with the scheme's aim of cutting CO_2. The Government seems to be accepting that disincentives for clean coal should be locked-in to the UK implementation of the ETS Phase II. This would contradict the Government's own policy as presented in The Energy Challenge while reducing the longer-term prospects for reducing CO_2 emissions and ensuring fuel security.

2.2 Support for Capture and Storage projects

The ETS has an important role to play in developing a UK CCS network. If the CCS plants are given CO_2 allowances, and if CO_2 stored is eligible in the ETS, then the generator would be able to sell the allowances to offset the costs of CCS. Thus the ETS could offer a substantial incentive to investment in CCS. However, this is highly dependent on the actual CO_2 price.

For at least the tranche of first-of-class plants proposed by the CCTG, the support framework and level needs to be firmed up. The group proposes that generators wishing to invest in CCS projects should bid for other government support in competitions similar to those run under NFFO. The CCTG suggests that bids would be for a guarantee of the difference between the support level needed (in £/t CO_2) and the actual CO_2 price available, and would be paid on the basis of tonnes of CO_2 captured.

Additionally, CCS projects should be given full support (tax relief) for the whole chain of investment from the power plant through the capture plant to transport and storage.

4. *Has the Government identified the correct proportion of allowances to be auctioned in Phase II? Should these be drawn solely from the power sector's allocation? What will the effect of this auctioning be on industry and the price of carbon?*

The TUC welcomes the Government's recent announcement of the UK's proposed National Allocation Plan (NAP) for Phase II of the ETS for 2008 to 2012, to auction 7% of its 238 million allowances per year during Phase II.

Auctioning marks the introduction of a new and probably more competitive market mechanism into Phase II. If national emissions allowances are set at tighter levels than in Phase I, then auctioning is likely to drive up the price of this segment of CO_2 allowances, increase industry's costs, and deliver windfall tax benefits to the Treasury. Treasury benefits should be hypothecated towards supporting R&D and investment in cleaner energy technologies, particularly in the fossil fuel sector.

In so far as auctioning is likely to encourage innovation in cleaner energy technologies, TUSDAC supports auctioning in principle. However, the process needs to be carefully controlled. Sector and plant targets should be fairly set against acceptable benchmarks. There must be safeguards against the potential for windfall gains that are not used to reduce CO_2 emissions.

Government needs to create the right climate to encourage research, development and investment in cleaner energy technologies, for example among fossil fuel energy generation. This means continuing to recognise the need to match industrial and environmental policies.

In view of competitiveness issues for UK industry, harmonisation across the EU on a transparent basis is of key importance.

Auctioned allowances should be drawn from the power sector's allocation, rather than impose greater pressure on energy intensive industries, already suffering from energy price volatility. Power generators have the option to pass through the costs of tighter carbon allocations to the full spread of energy consumers.

5. *What have been the effects of Phase I so far on the competitiveness of (1) business in the UK, and (2) business across the EU?*

Pricing carbon and creating a carbon market should incentivise reductions in carbon emissions. The World Bank estimates that in its first year around £7 billion worth of carbon allowances were traded globally. However, there is little evidence to suggest that to date pricing carbon has prompted companies to change investment decisions, or to replace inefficient equipment. Carbon price volatility and uncertainty about the future of the ETS, and the short time frames of phases I and II (three and five years) are seen as key factors.

One commentator suggested that the EU ETS has been responsible for an approximate 6% rise in electricity prices, much less than the 24% rise attributed to increases in gas and oil prices.

The German Government, for example, has recognised the need for greater policy certainty in its national allocation plan for phase II, committing free allocations for 14 years for new build power plants.

8. *How should aviation be included within the ETS? What are the latest indications of when it will be included?*

The TUC[2] supports the Government efforts to fully capture EU aviation emissions within the EU Emissions Trading Scheme by 2008, and believes that this should occur at the earliest opportunity. We acknowledge that including aviation emissions into the ETS under current aviation growth and efficiency trends is likely to have a major impact on the ETS itself. Unlike the participation of other sectors of the economy, the aviation industry would enter the ETS as a long-term net purchaser of carbon credits.

The TUC remains concerned that emissions from the aviation industry are, like maritime shipping, excluded from the Kyoto Protocol. This has a distorting impact on measuring the UK's progress towards its domestic and Kyoto commitments.

Environmental and Economic Issues

DEFRA figures show that between 1990 (the Kyoto base line) and 2004, CO_2 emissions from international aviation to and from the UK more than doubled to 9.1 $MtCO_2$. Taken together, with domestic emissions of just under 1$MtCO_2$, aviation emits about 10.6 $MtCO_2$.

Clearly, there are unresolved tensions between the Government's energy and aviation policies. In 2003, the Energy White Paper set the UK on a course to cut CO_2 by 60% by 2050. The 2003 Aviation White Paper provides for a huge expansion in air traffic, from 180 million passengers per annum (ppa) to 476 million ppa by 2030. Its framework to satisfy future demand includes options for five new runways and other facilities. The challenge for Government now is to manage this industry in the coming 10-year period in a manner consistent with our overall climate change obligations, working with our EU partners.

Aviation is a successful, dynamic and integral part of the UK and EU economies. Between 1997 and 2004, the UK's aviation industry carried 47% more passengers and 22% more freight. Both passenger and freight air traffic have recently been expanding at about 7% to 8% a year.

Climate Change

What are the implications for the UK's climate change programme of the continued expansion of the aviation industry? A recent assessment by the Tyndall Centre highlights the implications of continued aviation growth.

Tyndall's predictions assume that aviation grows at current rates until 2015, then more slowly; average aircraft fuel efficiency increases of 1.2% per year; and that limiting CO_2 increases to 550 parts per million by 2050 (consistent with the UK's emissions strategy). These latter two assumptions were questioned in a more recent Tyndall Centre report.[3] But, on this basis, aviation would emit about 32 million tonnes of carbon by 2050, or 50% of total UK emissions at that date. If the UK followed emerging scientific consensus that a lower CO_2 stabilisation level is required of 450ppm, as suggested in more recent Tyndall work, requiring even deeper cuts in CO_2, then the aviation alone would account for almost the entire UK quota by 2050.

[2] A sustainable energy policy for the UK, TUC submission to the Energy Review, 2006.
[3] *Living within a carbon budget*, Tyndall Centre, 2006, section 6.

A similar conclusion was reached by the House of Commons Environmental Audit Committee. The Committee compared the DfT's forecasts for aviation emissions for 2030 with our target level of total emissions. "By 2030, aviation could account for over 70% of the Government's carbon target of 65 million tonnes. In its memorandum, the DfT has accepted the order of magnitude of our figures". By 2030, this is equivalent to aviation emitting about 45 MtC, as against a total UK target of 99 MtC.

In 2002, a report from the Royal Commission on Environmental Pollution concluded: "Emissions from aircraft are likely to be a major contributor to global warming if the present increase in air traffic continues unabated."

RCEP was concerned that the government showed little sign of having recognised that action to reduce the impacts of air transport was just as important as action in other sectors contributing to climate change. If no limiting actions were taken, the rapid growth in air transport "will proceed in fundamental contradiction to the government's stated goal of sustainable development . . . Short-haul passenger flights, such as UK domestic and European journeys, make a disproportionately large contribution to the global environmental impacts of air transport and these impacts are very much larger than those from rail transport over the same point-to-point journey. A shift away from the use of air transport over such distances could reap considerable environmental benefits as well as relieving pressure on major airports.

The fact that rail transport cannot compete at present, at least in the UK, is a consequence of several factors, but these certainly include a failure to invest in a rail infrastructure and a failure to reflect environmental externalities in the cost of air transport."

Instead of encouraging airport expansion and proliferation, it was essential that the government should divert resources into encouraging and facilitating a modal shift from air to high-speed rail for internal UK travel and some intra-European journeys.

The TUC believes that a viable air transport industry is vital for growth and jobs. To maintain our competitive position internationally, while making substantial efforts to reduce our greenhouse gas emissions, international agreements must secure a level playing field, through the EU Emissions Trading Scheme and the wider Kyoto Protocol mechanisms.

Key industry players, such as British Airways, acknowledge the importance of addressing climate change and the industry's wider environmental impact. BA is committed to increasing the fuel efficiency of its aircraft and buildings, targeting a 30% improvement in aircraft fuel efficiency between 1990 and 2010 and a 2% per annum reduction in energy consumption in its buildings. BA wants to see aviation join an international system of emissions trading for greenhouse gasses.

Nevertheless, projected increases in demand will easily outstrip any technological improvements in engine efficiency and better environmental performance for several decades to come. Key factors are continued long-term reliance on kerosene; long design periods; and longevity of aircraft fleet now in service or planned.

Aviation Emission

As noted above, the TUC supports the full capture of EU aviation emissions within the EU Emissions Trading Scheme, and believes that this should occur at the earliest opportunity. This is likely to have a major impact on the ETS itself. Unlike the participation of other sectors of the economy, the aviation industry would enter the ETS as a long-term net purchaser of carbon credits.

Such concerns prompted the Environmental Audit Committee to question whether "any emissions trading system could generate sufficient credits to allow aviation to expand as forecast, while at the same time delivering carbon reductions of the order needed. The price of carbon could, in such circumstances, go through the roof—provided there was sufficient political will to maintain targets and enforce penalties," (Report, para 45).

Conclusion

A more coherent sense of stakeholder engagement in the ETS is needed at national and sectoral level. Significant investment, workforce planning and skills issues are involved in the implementation of the ETS. We would urge the EAC to consider how industry engagement in the ETS—both unions and employers—can be developed on a partnership basis.

The key operational issues for the EU ETS are **the low carbon price achieved so far within the scheme, and the lack of long-term policy clarity beyond 2012.** Investors require long time frames on which to base investment decisions in low carbon technologies, particularly the capital-intensive investment involved in new power plant and a carbon capture and storage (CCS) network.

The TUC supports the full capture of EU aviation emissions within the EU Emissions Trading Scheme. Aviation emission should be taken into the UK's carbon emissions totals, with controls based on an EU-wide scheme ensuring that the industry faces a level playing field against its competitors.

October 2006

Witnesses: **Mr Ian Rodgers,** Director, UK Steel, and **Mr Stephen Radley,** Chief Economist, EEF; and **Mr Paul Noon,** General Secretary, Prospect, Member, TUC General Council, **Mr Adam Lent,** Head, Economic and Social Affairs Department, and **Mr Philip Pearson,** Policy Officer, Economic and Social Affairs Department, TUC, gave evidence.

Q130 Chairman: Good morning and welcome to the Committee. Thank you very much for coming in to talk to us. As you may have picked up from the previous session, we are trying to drive through quite a lot of business this morning so I am hoping that we can get through by about 10 to 12 if we can. I do not want to inhibit your answers in any way but we have got a fairly tight timetable. Could I start with the TUC and the arguments of the Clean Coal Task Group. I understand that you object to the Government's proposed allocations for Phase 2 because these favour gas over coal. The Government's argument is that, of course, since gas emits less carbon dioxide, that is really what the scheme is supposed to be doing, to incentivise that kind of switch. Do you have any comment on that?
Mr Pearson: Thank you, Chairman, and good morning. Obviously the TUC does recognise that the EU ETS is essentially an instrument to contribute to emissions reductions, and I think one recognises the crucial importance of that challenge in the next decade with Stern and so forth. Our concern is that the EU ETS is not bringing forward investment in clean coal technology. To be totally realistic on a global scale getting coal cleaned up is possibly the senior issue in terms of meeting global CO_2 reduction challenges. China's CO_2 emissions from coal are massive. The UK's are significant and what we are looking for is for the UK electricity sector to have that stimulus through the EU ETS to invest in clean coal technology, allied to carbon capture and storage. We see the whole suite of technologies working together. It is not simply about more efficient coal plant because that will not deliver the CO_2 cuts we are looking for, but together with carbon capture we see this as an absolutely crucial stage in not just the UK but the European energy mix.

Q131 Chairman: What is your view about auctioning? If one moves more rapidly to a bigger proportion of allowances being auctioned, it removes the bureaucratic process of deciding what allocations should be made. What is your view about that?
Mr Pearson: There needs to be a judicious balance between auctioning and free allocations. The Government's proposal of 7% for Phase 2 seems perhaps a kind of minimalist position, but one has to recognise that industry is looking for stability as well as the challenge that auctioning could bring. Auctioning itself can bring stability because you could then have choice as to the price of those auctioned allowances, but to rush into very high percentages of auctioning too early might not provide that investment stability that companies are looking for. If the proceeds are recycled towards the Environmental Transformation Fund that is being considered, then we would greatly welcome auctioning, and progressively higher auctioning, carefully managed, could generate significant investment income.

Q132 Chairman: You have referred to carbon capture and storage, and certainly I share your view that that is a very important technology situation globally if we are going to have a global reduction in emissions. I think your argument is that if you have got CCS you should be allowed to sell the credits based on the amount of carbon that has been sequestered into the ETS market. Is that idea now being welcomed and supported by the Government and by the European Commission?
Mr Pearson: The problem is the answer is probably yes, and if you look at the Energy Review, you do see a lot of the right signals in the right documents in favour of CCS. Our experience through the TUC's Clean Coal Task Group has been one—and it is a joint industry/government advisers/trade union body—where we have been trying to get an overall idea of where the blockages are in the system. You talk to industrialists and they are talking to us very openly now about the blockages. Somebody mentioned earlier on references to the CEGB. Some industrialists now would almost begin to look back at the certainties of investment direction that used to provide. What is concerning the industry is the lack of clarity about the mechanisms that will actually drive forward this suite of investments, particularly for example the need to implement the recommendation of the Science and Technology Committee that all new power plant, whether it is gas or coal, should be licensed as being capture ready. In broad terms this means at least having the site capacity to add on the carbon capture suite of technologies, and yet what we are still waiting for is the suite of regulations that will actually bring forward this investment, particularly of course the ETS incentive.

Q133 Dr Turner: I wrote that recommendation from the Science and Technology Committee and it is very nice to hear it quoted back at me. Is it fair to summarise your answers in terms of getting carbon capture and storage in place as meaning that the ETS as it is currently is providing far too weak a signal so it is not actually having any effect on CO_2 emissions nor is it giving sufficient investment incentive to invest in CCS for the future? Is that a reasonable summation; it has got to be a much sharper, clearer signal?
Mr Pearson: The cap needs to be progressively tighter. That sends a signal on carbon price inevitably. Current regulations will bring forward gas investment. The Centrica proposal just recently on Teesside is a signal that industry wants to go in the direction of coal for all sorts of reasons we could discuss. It is only a signal. They are looking for two things still, I understand. They are looking for the signal on capital support for the carbon capture and storage element and I understand they are looking also for a signal through the ETS to support coal-fired generation. I think the cap issue is important, but it is really how the regulations then bring forward this mix of coal and gas. If we are not

careful, we are just going to get more gas-fired power stations and more problems internationally on security of supply, whereas beneath the UK lies massive coal resources, (secure because we have control of it), with no internal distribution problems if the industry is able to invest in new coal faces, with the price of coal being sorted out, which is another issue. But essentially, ETS regulations at the moment are not favouring that coal move that is, as we understand it from talking to industry, required.

Q134 Joan Walley: I would like to ask the Employers' Federation first of all and then the TUC just for your summary of the broad reaction and responses so far there have been to Phase 1 from different companies from different sectors.

Mr Rodgers: I can speak, I am afraid, only for the steel sector. Broadly, on Phase 1 our allocation in the UK has been more or less what we would have expected it to be. It allows us to produce the volume of steel that we expect to produce during the three-year period. In other EU Member States it has to be said that some of our competitors have received very generous allowances and have had allowances available to trade disproportionate to what they are intending to produce. I am afraid I cannot really speak for any other particular sector.

Q135 Joan Walley: And your colleague?

Mr Radley: In terms of the broad impact on manufacturing in terms of competitiveness and also emissions, I think in some ways it is hard to make a definitive statement because we are still at very early days. If you look, for example, at the Climate Change Levy it was several years down the line before we had definitive evidence of how well it was working. What is clear is that it is very difficult to disentangle the impact of the Emissions Trading Scheme from other factors which have been increasing the energy price. It differs very much from company to company, but many manufacturers have seen over the last couple of years an increase in their energy bill of around about 80%. Again, it is very hard to pin it down but we would say that around a fifth of that was probably due to emissions trading and the majority of the rest of it due to problems in the gas market. I think one thing you can say is that it has contributed to the squeeze on profitability in manufacturing. If you look at the figures of net rates of return on capital employed, it is at its lowest level for 14 years. We are back to the levels of the middle of 1992. I think the other factor, which is again difficult to disentangle, is that we saw issues last winter of large increases in prices and concerns over supply. We saw a demand-side response and certainly some companies were limiting output or transferring temporarily some of their production elsewhere. That clearly had a knock-on impact on emissions as well. It is quite hard to disentangle what has been happening on emissions trading from other factors in the energy market recently.

Q136 Joan Walley: But presumably if there is going to be a consensus on the way forward to tackle global emissions, it is going to be really important to disentangle these different issues, whether or not it is the failure of the rest of Europe to liberalise energy supplies or whether it is competition from other sectors within Europe or competition from other sectors outside of Europe as far as British manufacturing is concerned. Presumably in the work that you are doing you are working with different companies and sectors to have a means of doing this disentangling so that people can actually concentrate on how we go forward on the route map for carbon emissions reductions.

Mr Radley: Absolutely, and the one factor I would add to the list—and my colleague has already mentioned about the fact that many other countries in the European Union have been over-allocated in the first phase of emissions trading—is I think we are extremely concerned at some of the national allocation plans that are being put forward for Phase 2 at the moment. We share a lot of the Carbon Trust's analysis that it is only the UK, Italy and Spain that are actually developing credible plans. That concerns us, one, because we want emissions trading to be effective and we think that if only a minority of countries are developing credible plans, that will ultimately undermine it and, two, we are very concerned about the competitiveness impact.

Q137 Joan Walley: I want to ask the TUC the same question about the broad response from different companies in different sectors.

Mr Pearson: I think we would share the view of the EEF on the balance between the impact of electricity prices generally and the particular impact of carbon. There is a DTI study—and you have probably seen it—which I found late last week. It is called *EU ETS Phase 2 Over-Arching Partial Regulatory Impact Assessment* and that confirms that energy prices generally have gone up by around 75%, of which maybe a quarter is attributable to carbon price ETS effects and the rest is energy market issues.

Mr Noon: It is certainly true that in terms of the balance of views in the unions part of the TUC, those who are involved in industries which are high users of energy and electricity, like steel for instance, would very much echo the comments made earlier. There has been profound concern about the implications for their industries. Again it is quite difficult to disentangle which of that is caused by ETS and which is caused by other factors in high energy prices, but together it has caused huge pressure on the competitive position of those UK industries. In other sectors, other areas like my own where we are very much involved in the electricity supply industry, we can very much more strongly see the case for ETS and certainly unions looking at it on environmental grounds predominantly concede that case. At the TUC Congress this year there were motions on energy prices and a very strong feeling coming from a number of affiliates that in Europe there was not a level playing field and that British industry was at a competitive disadvantage.

Q138 Joan Walley: Can I ask one final question in terms of the make-up of the Trade Union Sustainable Development Advisory Committee. I was interested to see which unions make up the membership of it. Given the way in which the Carbon Trust has highlighted the sector of steel, particularly, as high energy intensive users and also ceramics, I wondered why it is that Community is not down there as a member of that advisory committee if you are going to link up all of these different issues, and there is a particular issue there, is there not, because of the high energy intensive use of the ceramics industry?
Mr Noon: I think there must be something wrong with the list, because Community play a big part in TUSDAC; they are very much involved in it.

Q139 Dr Turner: What do you think the impacts of the ETS on carbon emissions of UK manufacturing have been? Do you think it has had a significant effect? I suspect some profitability maybe and competitiveness, but has it affected carbon emissions?
Mr Pearson: I think it has made companies very aware of carbon pricing and carbon emissions management. I think it is too early to say how much carbon has been driven out of the system by the Emissions Trading Scheme itself, but there is plenty of anecdotal evidence. We have been involved in a project with Corus looking at ways of driving forward energy efficiency in a number of plants. There have been some very interesting case studies. We have had a grant from the Carbon Trust, who encourage joint worker management participation in energy saving initiatives in companies like Corus. There are very, interesting ways in which they are now becoming acutely alert to the options of driving down energy costs, and this is due to the ETS but perhaps slightly more indirectly in some of the sites.

Q140 Dr Turner: What do you think the impact of the more meaningful cap on emissions in Phase 2 would be?
Mr Pearson: Two things. First of all, hopefully (and we say this advisedly) it will stimulate the price of carbon, because the price of carbon, as we read today, is down to a very low level, nine euros a tonne, but the longer-term price is better than that, it is 19 euros or so. Obviously, the expectation is that a tighter cap would stimulate the price of carbon and would, therefore, stimulate investment in lower carbon technology.
Mr Rodgers: If I may step in on those two points, particularly as Corus, my largest member, has been mentioned. One point you have to bear in mind is that for an energy intensive sector such as steel energy price has been a significant driver for very many years. The steel industry has improved its energy efficiency by 40% over about a 20-year period. Unfortunately, we have today reached the point, I suppose, where the law of diminishing returns has stepped in. On today's technology there is very little more carbon efficiency, energy efficiency, that we can drive out of the system. The European steel industry is investing in a multi-million euro project in looking at what future generation of technology it might be possible to develop to discover lower carbon ways of making steel, but at the moment there is very little extra that can be screwed out of the main steel-making processes. Coming to your second question about whether a tighter cap in Phase 2 would deliver further emissions reductions for the steel industry, probably not, the reason being, as I said, that we have delivered just about everything we can at the moment in terms of energy efficiency, so all a tighter cap will do is force us to reduce our output. That is the only other variable in the equation.

Q141 Dr Turner: Paul, you have said there was anecdotal evidence from the TUC that there had been an effect on profitability and competitiveness in the British manufacturing industry. Has that actually fed through in changes in sales figures, profits, jobs in the UK, which can be attributed to the ETS? I know it is difficult sometimes to pull them out.
Mr Noon: I think Community, representing workers in the steel industry, would say so and, indeed, have said so, and certainly Amicus, representing all the people in manufacturing, are very firmly of that view, and that was expressed by the TUC this Congress. We could certainly go back to them and ask them for practical examples of where that is the case, but, I think, as was alluded to before, the question of distinguishing which of this is caused by the ETS and which of it is caused by relatively high energy prices compared to European and international competitors is quite difficult to disentangle, but we would be more than willing to have a go and would hope to come back with some evidence about it.

Q142 Dr Turner: Do the engineering employers have any view about that?
Mr Radley: I echo a lot of those comments. Certainly from our survey evidence, which is looking at both the companies that are covered by ETS but also those that are indirectly affected by it, because of the boost to energy prices, the great majority of them have actually seen a squeeze in profitability. We have seen a lot of evidence that there has been increased emphasis and success in terms of improving energy efficiency, but certainly the great majority of companies have suffered a squeeze on profitability because they simply are not able to pass the higher costs on to the customer.

Q143 Dr Turner: The environmental groups and the power companies have given us evidence which suggests that business concerns about competitiveness have been overstated. I think they are saying that you are screening too much. They have argued that the direct impact of the ETS is minimal compared to the central rise in energy prices, not least in gas prices. What would you say to that?

Mr Radley: I think we would probably refer back to one of the answers that has already been given, that the DTI has conducted its own study and suggested that emissions trading is responsible for around a fifth to a quarter of the rise in energy prices, so I think there has been an impact. I think we should be extremely concerned about the fact that manufacturing profitability is at its lowest level for 15 years, because that is going to have an impact on future investment decisions about whether the investment takes place in the UK or elsewhere and whether companies actually invest in the next generation of technologies that will deliver improved energy efficiency.

Q144 Dr Turner: Do you have an issue with power companies then, because they seem to be, for the moment, completely unscathed by the ETS, whereas you are having an effect and they do not seem to have any sympathy for you?

Mr Rodgers: Firstly, we need to distinguish between two effects or two sectors, if you like, the electricity generating sector, which is not subject to international competition and can pass on to its customers in full, we believe, in fact the opportunity costs, not the real cost, of ETS, and other sectors, such as steel and ceramics, that are subject to international competition and can only sell their product at the going world price. They cannot pass on any costs. As an energy intensive sector we have been impacted primarily at the moment by the higher cost of electricity. The DTI report just alluded to says about 25% of the increase in the past year in electricity costs has been due to ETS. We have been, as of present, not particularly impacted by the direct effects of ETS as active participants in the Emissions Trading Scheme, only as electricity consumers. Looking forward into Phase 2 and Phase 3, the same may not be the case.

Mr Radley: Can I add one more thing to my answer, which is that, if you compare our energy markets to those in much of the rest of Europe, it is widely acknowledged that our energy markets are much more liberalised; and what we have seen is a much faster pass-through of the opportunity cost of carbon by electricity generators in this country compared with many of those on the rest of the Continent.

Q145 Joan Walley: Could you repeat that for us? I did not quite understand the point that you were making there.

Mr Radley: What we have actually seen is that in Phase 1 of the scheme the carbon allowances have been granted free to everyone. As electricity generators there is actually an opportunity cost there that affects their decision in terms of whether they will use their inputs of gas to generate electricity or whether they actually use the gas to sell it back on to the spot market. When you actually introduce the fact that they have got carbon allowances as well, that gives them an opportunity to actually sell on the opportunity cost of that as well. We have seen that reflected in electricity prices in this country.

Q146 Mr Stuart: Following on the competitiveness argument, in its most recent report on Phase 2 of the ETS the Carbon Trust talks about the potential for participants to gain from passing on the market value of their allowances, even where they have been allocated for free. In fact it says that "competitiveness is not a serious concern in terms of the direct impact of Phase 2 EU ETS costs. Rather, Phase 2 is likely to be a phase in which most of the participating sectors can accrue profits from the EU ETS that can be used to assist investment, for example in low-carbon technologies." I wonder what you have got to say to that?

Mr Radley: Are you quoting there from the Carbon Trust analysis?

Q147 Mr Stuart: I am.

Mr Radley: I think, looking through the Carbon Trust analysis, it is a very good piece of work. There is some very sensible analysis of the political constraints, in terms of putting together credible plans for emissions trading, I think there is some very good analysis of the potential to create perverse incentives and also, if you look at the picture by sector, it does distinguish between those sectors that are particularly exposed to competitiveness concerns and particularly homes in on aluminium, iron and steel. I think that is very sensible. Probably we would hope that the competitiveness analysis went a bit further. For one thing, it does not pay enough attention to the hit on profitability, which, as I have already said, has suffered a big squeeze. Clearly, also, there are assumptions on the carbon price. At the moment it might be quite sensible to assume a carbon price of 15 euros per tonne, as the Carbon Trust assume, but earlier in this phase we saw carbon prices of around 30 euros per tonne, and so it could easily go back in that direction as well. Also, we need to distinguish between both competitiveness impacts versus the rest of the world from the European Union and competitiveness impacts within the European Union. Clearly, if other European countries are able to submit lower national allocation plans than they are in the UK, that will have a competitiveness impact. The other factor is that you have to look within sectors as well. It is overly simplistic to just look at the overall impact on a particular sector. If, for example, you look within the steel industry, there are very different levels of energy and carbon intensity between individual companies depending on what they are producing. For example, higher quality steel has a much higher carbon intensity than lower quality steel. I think there is a range of factors that you need to take into account when you are looking at competitiveness. I think the Carbon Trust has produced a good piece of work, but you need to go further.

Q148 Mr Stuart: Can you describe the engagement you have on the EU ETS policy with Defra, DTI and, indeed, the Carbon Trust?

Mr Rodgers: It is quite close with all three actually. We are in very active conversation with DTI and Defra about Phase 3, post 2012, which is where the

debate is currently, and we have been talking to the Carbon Trust, sharing ideas about how a scheme can be devised for Phase 3 that has the lowest impact on competitiveness, but, nevertheless, delivers some real carbon savings. I think, if we were to criticise our dialogue with government, it would be over the development of the Phase 2 allocations, where we had some very difficult discussions with DTI, and certainly there are some steel companies who will be under-allocated in Phase 2 simply because they are planning to increase their production.

Q149 Joan Walley: Could I ask the TUC, I was very interested in the comments that you made about stakeholder engagements and wanting to see workforce development, skills training as part and parcel of the whole debate, discussion and arriving at decisions about how we implement ETS. Have you got an action plan for how government could do that and the kind of recommendations that our committee should be making on that?
Mr Noon: No, is the straight answer to that, but we soon will have. It is something we have been thinking about because, obviously, the issue of ETS has become more important to unions, and generally, on the question of sustainability. I do not think it is fair to say that the level of engagement and involvement through TUSDAC, now co-chaired by Ian Pearson, has been good but there is a sense that the process is not as coherent as it should be. We are consulted in different ways by different bits of government and what we are going to try to do is to bring this together a lot more closely, and certainly speaking to ministers about that, but also with a view to getting more engagement at company level, more engagement of local representatives and developing that action plan, which we clearly need.
Mr Pearson: It is not a tripartite body.

Q150 Joan Walley: I am sorry; what is not a tripartite body?
Mr Pearson: TUSDAC, the Trade Union Sustainable Development Advisory Committee. It is a trade union and government body, it has not got that third bit, which is industry. The ETS is so important and will be increasingly important across Europe, it is such a major initiative that we feel that within the UK and, indeed, in Europe there is something missing in the nature of the social dialogue that takes place around the discussion that we are having today. So EEF sees government, we see government, someone else sees government, but is there a coherence?

Q151 Joan Walley: In terms of everybody getting round the same table and that tripartite structure that you are saying you would like, on whose say-so would that come about?
Mr Pearson: It would need a government initiative, would it not?

Q152 Joan Walley: I am asking you. I do not know
Mr Pearson: I think the answer is that it would need a government initiative to bring together the three parties to have a substantial discussion over a major issue like the ETS.

Q153 Joan Walley: Would you see that as something which should be included in the forthcoming Climate Change Bill in the Queen's Speech?
Mr Noon: We think that will be a very sensible move.

Q154 Joan Walley: Have you set out these ideas in any way in any more detail yet?
Mr Lent: We recently wrote to Defra and suggested meeting the Secretary of State and ministers to talk through these ideas. One thing we are particularly keen to keep an eye on is the nature of the Carbon Committee and what its make-up will be and whether that will involve key partners from industry, from the unions, from government, to make sure that the Government's climate change policy has as much bite as possible, but, as yet, there is no clear sense as to what the make-up of the Carbon Committee will be.

Q155 Joan Walley: In terms of stakeholder involvement and engagement, you are looking at perhaps a tripartite system at the top, but at the bottom, in terms of the links that you have, for example, with Learning and Skills Councils, with the Lifelong Learning that the TUC has promoted so well with the shop floor engagement and trade union resource learning centres, do you see this whole debate about carbon emissions, global warming somehow or another promoted through wider debate and engagement and skills training at that level and, if so, how?
Mr Noon: Yes, we do, and we have done quite a bit of work, partly funded by grants from the Carbon Trust, by launching our Green Workplace initiative. There was a big effort at the TUC this year. David Miliband came along. We produced a booklet for all delegates at the TUC, which we have disseminated more widely, setting out ways in which this might be done. What we are trying to do is to use some specific projects to take us forward which will actually reduce the amount of carbon emitted in any case. One example is in Corus, another is in the TUC Congress House itself.

Q156 Joan Walley: Might one be in the cluster of ceramic industries as well?
Mr Noon: It would be a very good idea to do that. We are always looking for ways of involving and engaging people, and one of the things that we find, quite frankly, is that when we as unions go out we get a very good response from our members, a very good response particularly from newer members, people who might be not be active in any other way, who want to get engaged and involved in this to make their employment more environmentally friendly. We have had an excellent response whenever we have gone out. We need to do more of it and we are using some of the Carbon Trust grant to enable us to do that.

Q157 Joan Walley: Can I ask the employers if you would concur with that and whether or not you see government relying solely on the actual mechanism itself or whether or not there are other means of engagement which need to be brought to the table.
Mr Radley: I think there is a variety of ways. Indeed, the EEF works closely with the Carbon Trust as well. We have run a number of low-carbon workshops for our members and these look at raising awareness of companies as to actually how they go about implementing energy efficiency measures and how they go about measuring their effectiveness and getting it embedded within the company. So, that is one very effective way to do it. I think another thing the Government should increasingly look at is the Manufacturing Advisory Service. This has become a really trusted and respected organisation amongst business, actually helping a business to improve its productivity across a range of fronts. I think there are opportunities there for the Manufacturing Advisory Service to work with business in terms of looking at how it can improve its efficiency. Indeed, EEF is very involved in the MAS itself and actually runs the Manufacturing Advisory Service in parts of the country.

Q158 Joan Walley: I should know, but I do not: who is the Manufacturing Advisory Service?
Mr Radley: It is an organisation that is funded by the DTI. It uses people with business experience to actually provide consultancy to business—it is often free, not always, sometimes subsidised—in terms of a range of areas where they can improve the efficiency of their business. So we are looking at lean production, lean manufacturing, but increasingly it is talking to business about innovation and starting to talk about energy efficiency as well.

Q159 Mr Stuart: You have talked about the need for improved tripartite coordination at a domestic level. I wonder whether you can tell us about the engagement you have at the European level as individual organisations and on a co-ordinated basis?
Mr Pearson: From the TUC's point of view, the European TUC (the ETUC) is represented on this body called the High Level Group along with business partners, the European Commission and most of the directorates general seem to be on it, and for the ETUC John Monks represents the European trade union grouping and there is a good flow of information between the TUC in the UK and other national trade union bodies across Europe. Obviously, some of the challenges across Europe are very much replicated in the UK. But across Europe trade unions are trying to promote energy efficiency clean coal and low-carbon or carbon-free options.

Q160 Mr Farron: Taking us back to something we were talking about earlier on, Mr Rodgers, you reiterated in the Employers Federation memo really that you felt that opportunities for further carbon reductions from energy efficiency were pretty much exhausted now and instead, in the memo, you focus on the need for large investment and a step change in technology and investment in technology. I am interested to hear what new technologies are out there that will lead to further big cuts in carbon emissions and what will it take to bring them into widespread use?
Mr Rodgers: The simple answer is that they are not there at the moment. I referred earlier to this pan-European research programme that the European steel industry is funding, and that is, at an early stage, currently assessing the likely technology paths to go down. Carbon capture and storage is one possibility, but it is broadly Blue Sky thinking at the moment, leading then to the selection of one, two or three technologies that are worthy of future research and development. There are not going to be any short-term wins from this, this is a very long-term strategy, but Europe is probably at the moment leading the world in steel industry terms in trying to find new low-carbon routes of producing steel.

Q161 Mr Farron: Looking at the simple fact that we are in a very carbon constrained world now, you have said that this is a long-term problem to challenge and also that there is no scope for further efficiency, or no major scope for further efficiency. What is the way forward for UK industry in that case?
Mr Rodgers: I am talking specifically about steel, not about UK industry generally. Steel is a material that is going to continue to be needed around the world. It is vital to any developing economy. It drives development. You will not get any other low-cost and low-carbon technologies, whether they are wind farms or nuclear power stations, without steel. So, the issue is not whether we will continue to need, and therefore manufacture, steel in the world, the only issue is where that steel is manufactured. If we get our policy mix wrong, we will end up pushing the manufacture of steel outside of Europe to other non-carbon constrained economies. We do not think those mistakes will be made.

Q162 Mr Farron: Obviously it is broader than just steel, but looking generally, we have come across an amount of evidence that suggests that there is a first-mover advantage in global markets for low-carbon technology that this country and the EU as a whole could enjoy if the ETS was sufficiently testing. What are your views on that?
Mr Pearson: We firmly believe that this is a land of opportunity. Clearly, there are threats and worries, particularly in heavy energy intensive industries like aluminium and steel, but aside from those challenges, which are major and there are major trade union concerns over those industries, and ceramics too, the whole point is that this is a question of opportunity. We have no choice anyway but to take carbon out of the system wholesale, massively, annually. There are technologies in certain industries that can be brought forward through various means, but we think the evidence that we have submitted here focuses very much on the carbon capture and storage issue, the clean coal, carbon capture and storage. It is an industrial

opportunity for the UK. There are research issues, there are skills issues around bringing the technology forward, but there are framework questions to do with the Emissions Trading Scheme and is it or is it not going to be the servant to this technology? It looks as if, for the moment, it is not, under current government proposals, going to deliver the investment in clean coal, intensive coal generation, with highly intensive energy efficient generation allied to carbon capture. There is plenty of other evidence around from other organisations, like the Carbon Capture and Storage Association, that the different bits of the technology are there, waiting for the right investment framework to come forward, and it is about frameworks, it is about supporting the market. Stern talked about climate change being the global market imperfection, market failure, and if markets are failing, and we think they are, then we need to find ways of getting those markets right and very urgently to bring forward this technology. You can perhaps bolt some of these energy intensive using industries like steel or aluminium in some ways on to the carbon capture and storage network, but essentially it is a power generation issue and essentially it is about decisions that we can and must make, we believe, to bring forward these opportunities. It is not to say we do not care about renewables, wind, wave, tidal and the whole nuclear industry option around carbon-free generation, and so on. The frameworks are quite different. But obviously, the manufacturing opportunities that exist around the renewable area are also massive and opportunities have perhaps not been taken. They may not be central EU ETS issues, but there are other frameworks that will provide huge opportunities for UK industry.

Q163 Mr Farron: Employers are, quite rightly, raising concerns about competitiveness. The Carbon Trust identifies three options for safeguarding European industries from the impact of competition from firms that are not subject to similar carbon-related costs. What are your views on the Carbon Trust's proposals?
Mr Rodgers: The first recommendation is international agreements that cover all the major competitors in a specific sector. We would see that as very much the way forward for the longer-term. We think it is more important to get harmonisation across sectors than between sectors. Secondly, it refers to the use of a border tax adjustment. That proposal is superficially very attractive to offset the competitiveness effect of higher costs incurred here. The problem is that it tends to run up against WTO requirements. If the EU were to impose unilaterally a border tax adjustment on imports from non-Kyoto constrained economies, under WTO rules those economies would have the right to impose similar tariffs on a range of European products. There is a risk that that could lead to a global trade war if it was mishandled. We think it is far better to go for a system that does not impose those high costs on EU manufacturing in the first place so that it obviates the need for any border tax adjustment. The third proposal is to make carbon allocation proportional to production levels. Again, that is an idea that we have been actively promoting with government currently. We think that allocation needs to be proportionate. They need to be driving efficiencies from the process rather than being directly related to the amount that you produce. If the only way to achieve compliance with a particular target is to reduce your production, I would suggest that is a failed mechanism; but if you can produce a system that encourages carbon efficiency in the process, then that is the way to go forward, and, again, we have been discussing ideas around that with the Carbon Trust, Defra and others.

Q164 Joan Walley: May I ask you about the comments you just made about the compatibility or otherwise for the WTO and what framework for discussion there is to try and iron out some of those problems?
Mr Rodgers: The simple answer is that there is no framework at the moment. The environmental aspects of trade were originally on the Doha development agenda but were knocked off at one of the earlier failed ministerials. There is obviously still in Geneva a forum for talking about that sort of thing, but the discussions are not active at all at the moment. I think the way forward is very much to seek to roll out to the rest of the world a successful European Emissions Trading Scheme, one that does deliver carbon reductions at the lowest cost to business that other sectors could sign up to and, as I say, pursuing a sectoral approach perhaps to that.
Chairman: Thank you very much. I think we are out of time now, but we are very grateful to you all for coming in. I am sure we will reflect much of what you have said in the report that we write.

Memorandum submitted by Climate Change Capital

1. Summary

— Phase 1 of the EU ETS should be regarded as a learning phase. It has been successful because it has placed a value on carbon and enabled a functioning international carbon market to be put in place prior to the Kyoto compliance period. However, the impact of the EU ETS may have been disappointing to some observers, since the major impacts have been:
  — Higher power prices.
  — Windfall profits for the utility sector.
  — Little change in operating behaviour.

— No investment in Europe yet.
— Large scale investment in developing countries.

Three are three major drivers for this outcome. First, the over-allocation of allowances, caused by incomplete emissions data at the outset. Second, the availability of low cost allowances from the developing world due to the ability to import allowances created by reducing emissions of exotic gases in the developing world, but not within the European scheme. Third, the lack of any price visibility post-2012.

These shortcomings may be remedied. The actual emissions data for 2005 should allow better allocation of allowances for Phase 2 and clarity on the post-2012 framework should do much to improve the financial attractions of investments to reduce CO_2 emissions, especially as the cheaper exotic gas opportunities are exhausted.

2. Introduction to the Authors

Climate Change Capital is a specialist investment banking group that occupies a distinctive position. With access to a substantial and flexible capital base, we focus on businesses created or affected by the convergence of laws and polices on energy and the environment. Our dedicated team of 90 professionals located in London, Washington, Madrid and Beijing are experts in the fields of renewable energy, clean technology, biofuels and emissions reductions markets.

Kate Hampton is responsible for our relations with the policy community. She is a Sherpa to the EU High Level Group on Competitiveness, Energy and Environment, advising the European Commission. She rejoined the company in January 2006 from a year's secondment as a Senior Policy Advisor to Defra for the UK's G8 and EU Presidencies where she worked on the future of international climate change policy. Before joining CCC, Kate was Head of the Climate Change Campaign for Friends of the Earth International. She is the former Convenor of the Green Globe Network, an expert advisory group funded by the Foreign and Commonwealth Office. She was a research associate at the Institute for Policy Studies in Washington DC and an EU policy consultant for Environmental Resources Management. Kate holds a BSc from the London School of Economics and a Masters in Public Policy from the Kennedy School of Government at Harvard University.

Dr Tony White, MBE is Climate Change Capital's Head of Advisory. Tony has been involved in almost all aspects of the energy industry, ranging from renewable energy research through to strategy, finance, international development and policy. He has made major contributions to the evolution of the industry during this time. Having been the analyst for the UK Government's broker during the liberalisation and privatisation of the England & Wales electricity industry in 1990, he recognised the different role required of network companies serving competitive power markets. This led to the introduction of the Transmission services scheme in England & Wales and was the driving force behind the UK Government's recent review of distributed generation. During the period 1996 to 2003, he was the head of the pan European Utilities Equity Research team at Kleinwort Benson, then Citigroup. Under his leadership, the team became ranked as the "team of teams" in the Extel survey of equity research and was ranked top European utility team by "Institutional Investor". He has been at the forefront of understanding the impact of liberalisation on the generation sector, correctly forecasting the path of power prices in Europe and the USA. He is a non Executive Director of the New and Renewable Energy Centre at Blyth and a member of the Advisory Boards of the United Kingdom Energy Research Centre and the Energy Centre at Sussex University. He has a BA in Physics and D.Phil in Biophysics from Oxford University and an MBA in Finance from the City University Business School.

3. Detailed Response

3.1 *What are the key lessons to learn from Phase 1 of the scheme?*

Phase 1 of the EU ETS has established a price for emissions reductions, which should be regarded as being helpful.

The first period of the scheme has been set for just three years and, although the outline for the second phase's five years has been determined, the amount of abatement required of the scheme will not be determined until late 2006. This is the fundamental driver of the market. Investors have not regarded the price for the first five years as a firm indicator for the second and so are not taking investment decisions based upon it. The corollary of this is that investments based on savings from emissions reductions alone require a three (now one) year payback. There are not many opportunities that provide such immediate returns.

This leads to the realisation that most decisions are being taken on the basis of short run marginal cost considerations. As such, the simplest way for the European traded sectors to reduce emissions is for coal-fired stations to cut back their output and for production to be increased at gas stations to compensate. Thus the allowance price should be related to the prices of coal and gas, as well as their associated emission factors and efficiency of conversion to electricity. Figure 1 shows that until verified emissions data was released in May 2005, the "implied price" (ie the price of an allowance that equalises the cost of generating power from

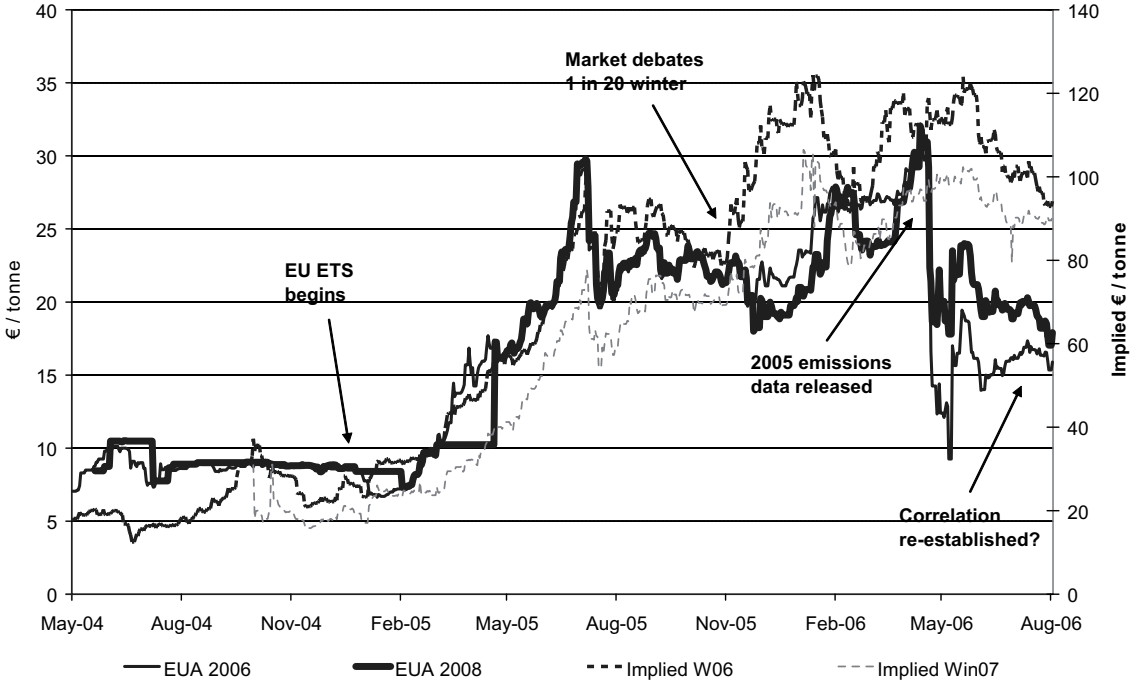
coal and gas at particular efficiencies) did follow the observed price of EU allowances. However, the actual price was about one third of the implied price. (With the release of verified data, the correlation became weaker, although it appears have re-established itself.) There are many possible reasons for this discrepancy, but what really matters, from an investment point of view, is that the allowance price is currently driven by fossil fuel prices. For example, the price of gas has fallen in the past month from 101 to 91 p/therm; the price of 2006 allowances has also fallen from €16 to €12 over the same period. Because fossil fuel prices tend to be volatile, so the value of allowances is also likely to continue to be volatile, making investment decisions problematic.

Layered on top of this, we now know from 2005 verified emissions data that Phase 1 of the EU ETS may be on track to have a 40 Mt excess of allowances. Given this is the case the allowance price should fall to zero. The reason it has not is due to a lack of liquidity in the market. In around half the EU Member States, the power sector was short of allowances along with a handful of industrial installations. Where there is a shortage, there is demand for allowances. The power companies have tended to be the only businesses with the capability to hedge on a month-by-month basis. Their natural trading partners are other industries, with the surplus allowances. However, currently industry tends to have a compliance mentality, so excess allowances have not been released onto the market, contributing to a lack of liquidity. Allowance prices have already started to slide in the past month due to more clement weather and therefore reduced fuel demand and prices. With the release of the next round of verified data in May 2007, the allowance price is likely to decline further as industry players confirm they have enough allowances to cover emissions to the close of Phase 1. An excess of allowances released onto the market will probably make it long, driving the price to zero.

All these factors are not conducive to stimulating investment and underline the need for tight caps across the EU in Phase 2 and beyond.

Figure 1

PHASE 1 TO AUGUST 2006



Source: CCC analysis

3.2 *What have been the effects of the method chosen for allocating allowances in Phase 1?*

Member States have set their own emissions caps. Allocations in Phase 2 were largely made based on a grandfathering basis linked to business as usual (BAU) assessments rather than auctioning. Because historic emissions data had not been collected on a systematic basis for all the installations covered by the EU ETS, many of the Member States had to rely on *estimates* of BAU emissions data from the installations themselves and trade organisations. Not surprisingly, they tended to overstate their requirements. This has led to an overallocation of allowances and an excess not shortage of allowances in Phase 1.

But Phase 1 can be regarded as a learning phase, and the published emissions data viewed as a calibration of the baseline data on which to allocate permits for subsequent trading phases. In light of the published information, Member States should be better able to set effective allocations for Phase 2. Domestic agendas

have seen some Member States set caps in their Phase 2 NAPs that are far higher than those requested by the European Commission or that their verified data merits, putting the integrity of Phase 2 of the EU ETS at risk. The Commission has a significant role to play in reducing the caps, although their powers are limited.

Looking forward, a remedy to this situation for Phase 3 will be to set an overall absolute EU cap that is then subdivided among Member States and allocated at sector and installation level through auctioning.

3.3 *Has the Government identified the correct proportion of allowances to be auctioned in Phase 2? Should these be drawn solely from the power sector's allocation? What will the effect of this auctioning be on industry and the price of carbon?*

The power sector in the UK is relatively shielded from international competition and therefore best able to pass on the cost of carbon onto customers, thereby minimising the affect on competitiveness. This, combined with the sector's historic overestimation of allowance requirements, provides a reasoned basis for the auctioning of allowances from the power sector's allocation.

Auctioning even just 7% will be useful in terms of a degree of price discovery. However, its potential effect on the price of carbon will be difficult to determine at least until Phase 2 NAPs across the EU are finalised. In principle, there should be no impact on the price, as it is the total number of allowances in circulation that should determine price, not who holds them initially.

3.4 *How well are the EUETS and CDM working together? What needs to be done to better integrate these markets? Is CDM funding the right projects?*

There are two types of carbon abatement:

— Low capital cost options involving end-of-pipe solutions, operating behaviour, efficiencies; and

— High capital cost options involving long-term technological transformation.

With respect to the links between the EUETS and the CDM mechanisms, the question should focus less on how well are they working together per se and more on are they working to deliver the desired outcomes? The CDM aims to deliver economically efficient emissions reductions and facilitate technology transfer to developing countries. However, this should not be to the detriment of introducing emission reductions within the EU through, ideally, investment in a low carbon infrastructure, the "supplementarity" concept. Thus far, the first type of carbon abatement is occurring very successfully but the second remains elusive. This issue is discussed further later in this submission.

On integration—a technical point. CERs (credits from CDM projects) and ERUs (those from JI projects) can only be used in the EUETS if the international transaction log (ITL) is functional. The contract for building the ITL has only been awarded in the last month or so—timely delivery of the log is critical to integration of the two mechanisms.

On investment in the "right" projects. Investors will wish to maximise returns on their investments and there can be significant overheads to the CDM project approval process. These reasons, combined with the absence of certainty over the post-2012 framework, mean investors will be drawn to the "low-hanging fruit", for example end-of-pipe solutions to emissions of exotic gases from industrial plants. While these projects make a significant contribution to the reduction of GHG emissions globally they are not contributing to the development of a global low carbon infrastructure.

3.5 *What work needs to be done now to help design a third phase of the EUETS? How can the experience of the EUETS be used to help the design of the post-2012 Kyoto mechanism?*

Or what needs to be done to ensure the EUETS and other mechanisms catalyse investment in a global low carbon economy?

The process of investors establishing an internal rate of return (IRR) is highly subjective due to the number of assumptions that need to be made in appraising a new project, particularly when dealing with long-term infrastructure projects in complex risk environments. What is obvious is that increasing the minimum carbon price and the time over which carbon value can be recovered improves project returns. This was always going to be the case. The key question is by how much does price and/or period have to increase? This depends on the asset class.

With time, as investors and companies become more familiar with the movement of allowance prices, they may be willing to make investments whose return will be determined by allowance prices alone, much in the same way as developers invest in gas and oil fields. However, like gas and oil, investors are unlikely to commit to a project requiring for example a €25/tCO_2 allowance price to make a return, much as the petroleum industry makes decisions based on oil prices of around $30/bbl, despite the current spot price being closer to $60/bbl. This has been observed in the carbon market. CDM projects are currently being developed at costs of $0.5-8/$tCO_2e$, despite the current higher allowance price. Moreover, with these projects there are considerably greater delivery risks than associated with corporate oil industry deals.

The consequence is that, to date, there has been little capital investment in the EU to reduce emissions. This presents a perception that the impacts of the EU ETS are negative—windfall profits for the utilities, rising customer prices, and no investment in Europe. However, it is important to recognise that the windfall profits are a consequence of the free allocations, which was a political construct to improve the palatability of the scheme. This is not a failure of a trading as a means to reduce emissions. With time, investors may become more comfortable with the price behaviour of allowances and so investment may be forthcoming. Initially, we expect that investments are unlikely to be made on the basis of emissions alone but, should a company wish to build new capacity on the basis of demand for its product, the choice of technology may be influenced by emissions values.

However, recent reports from among others the Tyndall Centre indicate responses to the threat of global warming are required on a timescale more urgent than previously thought. Therefore, some adjustments will be required to the emissions trading scheme beyond 2012 to bring forward the required investment. Essentially, what investors need is greater regulatory certainty from the EUETS in order to establish something like a minimum carbon price that they can plug into spreadsheets for long investment periods when they assess new projects. Whether this needs to be an indication of the level of ambition or an actual price floor depends upon timing in the policy cycle and upon the investor.

Some of the problems that are being encountered by the current scheme will be easily rectified. For example, the lack of high quality emissions data covering the traded sector has vanished now that verified emissions data have been received for 2005. Furthermore, the uncertainty introduced by the absence of banking between periods will not be repeated between Phases 2 and 3. Moreover, the practice of providing grandfathered allowances to existing installations could be removed for Phase 3, or at the very least for sectors that are not exposed to international competition and so are able to pass on allowance costs to their customers.

Nevertheless, the climate for investments would be greatly improved were the trading periods extended. Could not the abatement targets be set for 15–30 years, compatible with the investment cycles of the large emitting industries? This is, perhaps, the real crux of the matter. Investment likes certainty, yet democracy requires that politicians can change laws. Is democracy (in the form of frequent changes to legislation) incompatible with trading? We think not. Investors recognise that trading regimes that are not delivering policy objectives will be changed. So a mechanism needs to be developed that allows, on the one hand, investors to be given a framework for trading that could last into the long term, yet may also be altered if these objectives are not being met. For climate change, this requires confidence that the goal of achieving substantial emission reduction targets will be maintained for the long term.

Finally, the idea of full auctioning in Phase 3 is now gaining acceptance among the large utility companies. The benefits of auctioning are that it will give full price discovery—the full cost of carbon will be incorporated into the market; improved liquidity with the market (which currently trades at only around 10% volume, which is keeping the carbon price artificially high); and would also provide a steady revenue stream for Government. But auctioning must be combined with tighter caps—to create confidence in the carbon value. But with a number of draft NAPs for Phase 2 already published, this prospect is not yet secure.

Governments will have another chance to address this problem as they design the post-2012 regime. Hopefully, the abatement required for the post-2012 will be greater, suggesting that allowance prices will be higher, all other things being equal. The trouble is that such things are not always "equal". A fall in gas prices, or an increase in coal prices, could cause allowance prices to fall. So it may be necessary for Governments to take action, either unilateral or multilateral, to increase confidence that prices will not fall below a level that would render investments uneconomic. Of course, the most obvious way to increase the market's confidence in the scheme would be to ensure that the scheme is expanded to include the USA and Australia.

October 2006

Witnesses: **Dr Anthony White,** Head of Advisory, and **Ms Katherine Hampton,** Manager, Advisory, Climate Change Capital (CCC), gave evidence.

Q165 Chairman: Good morning and welcome to the Committee. Thank you very much for coming in. I am sorry, we are running over time. Would you like, by way of introducing Climate Change Capital, just to say a word about what the organisation does and, in particular, the kind of projects that you invest in?

Dr White: Certainly. We are a banking company. We buy products and services to governments, corporates and financial institutions all associated with climate change. We have three parts to the company. We have an advisory bit, which I lead, where we provide advice to governments about how to design policy to make you meet your objectives rather than the law of unintended consequences in the environmental area, we advise companies on raising money for bio-fuel refineries, we have recently advised Progressive Energy on the advanced coal power station with combined carbon capture and storage, so I was interested to hear those comments there—that is happening—and we advise companies on energy efficiency measures as well. We also have a markets fund that has almost a billion dollars under management to invest in clean projects

under the Kyoto Protocol and maybe under voluntary arrangements to invest in emission reduction rights which we can then sell. Also, in order to get the rights you sometimes find you have to invest in the projects themselves, and then you have got to also invest in the development companies to get the projects in the first place, and so we are quite heavily invested in China, India and Brazil. Then we have a small investment arm where we run Ventus, which is a small venture capital trust for small renewable projects in the UK ultimately. We started off three years ago with four of us; we now employ 100 people.

Q166 Chairman: That is impressive. The City of London published a report not long ago which was very bullish about the potential growth in what was described as "the climate change industry", in a broad sense. I guess you probably share the optimism which that expressed. Do you think that is yet reflected in the level of investment that has taken place in low-carbon technologies.
Dr White: No. Shall I expand?

Q167 Chairman: Yes; do.
Dr White: There is investment going in, but I think one of the problems we are facing is the Emissions Trading Scheme in Europe, which is a great scheme, I believe, and I think it is what we should work on; but the first phase of the scheme only had three years visibility and the rest of the scheme was only out until 2012, and it is difficult to find investments within Europe that would give you a sufficient return in that short period. So what has happened is, even though it was our submission that said there has been very little change in behaviour in Europe, next to no investment in Europe, driven by a carbon price, we have seen the investment in the developing world because it is much cheaper to invest in carbon, and so you can get a return within three years, or certainly within seven or eight years, and so that is where the money has gone. What we need is a longer-term visibility on the price and then I think we would get the investment, but here is where I may part company with other people. I think, even if I had my dream to think we had a world carbon price administered by some world organisation that bought and sold allowances according to where the price was going to meet some overall objective, I am not sure that would be fast enough. The reason for that is that we have oil prices of $60 a barrel, or higher, maybe a bit lower, but nobody invests in oil projects that need $40 or more to make a financial return. In other words, people take a haircut on the price, and I expect that to be exactly the same for carbon. There is nothing wrong in that, but I think over the next 10 years we will be doing quite a lot of investment, particularly in our electricity infrastructure, which I know a bit more about, and I am worried about making investments where the carbon signal is not getting through and we end up with the wrong kind of technology, and once it is built it is built and can last 30, 40 years. So, I am keen for us to have something else to augment the current EU ETS price to get people to be more willing to invest.
Chairman: Incidentally, we are grateful for the memo which you sent the committee, on which I drew very heavily for a speech I had to make in America the other day, but what you have just said I think leads quite naturally on to what Martin is going to raise now.

Q168 Mr Caton: WWF have submitted evidence to us on the use of Clean Development Mechanism and Joint Implementation credits in the EU ETS. They argue that unless use of these credits is tightly limited, there will not be enough investment in carbon abatement in the EU. What are your views on the use of these credits and how do you see the Commission approaching this issue in their current review of the scheme?
Ms Hampton: There are a couple of things that you have to bear in mind. One is that supplementarity is required by the Kyoto Protocol, and so the Commission is required by international law to enforce limits on the use of the flexibility mechanisms. That is the first point. The second point is that it depends what kinds of projects you are looking for. Originally the Clean Development Mechanism was designed to have two objectives: one of those was abating carbon and the other one was sustainable development. It certainly achieved the objective of abating carbon equivalents around the world by hoovering up the lowest cost reductions, but on the issue of sustainable development, because there was so much low-hanging fruit that you could achieve through end of pipe solutions, the longer-term infrastructural change, or waste managements projects, or other projects through the CDM have not yet materialised, for the same reasons that Tony was explaining, lack of long-term visibility. Again, when you are talking about infrastructural change in developing countries, you also need long-term signals for those projects. So, what applies to the EU ETS in terms of lack of visibility also applies to the CDM. We are very much of the view that if you are investing in carbon abatement projects, it does not matter where that happens in the globe, but what you have got to work out with policy-makers is what is your objective. Is it to achieve the lowest cost reductions at high volume and low-cost, or is it to achieve the slightly more complicated investments where you are using carbon price as a carbon finance tool rather than as an offset mechanism; and if you are seeking to do that, then you need to have integration with energy policy and you need longer-term signals. If you just have the ETS and the entire burden of climate policy is resting on this one instrument, it will force out the lowest cost reductions. It has been very effective at doing that. When it comes to setting caps on Clean Development Mechanism projects, for instance, within Europe, the question is: what are you trying to achieve? By just setting a cap on the use of CDM because there is a lack of long-term visibility, you will force up the price of reduction within Europe

without driving long-term investment. What you need is a combination of supplementarity signals, on the one hand, which show you where Europe is trying to send its money, and, on the other hand, long-term signals that mean that the investments, either in Europe or overseas, lead to long-term infrastructural change.

Q169 Mr Caton: Are you saying that the WWF, in calling for tighter limits on credits, have oversimplified things?
Ms Hampton: I think it is oversimplifying things, but I think that their attachment to the supplementarity principle under the Kyoto Protocol and the leading enforcement of that is something that the Commission is bound by. Of course, the Commission does have to set those caps, but we believe that, without a long-term signal, setting those caps will not actually result in the objective that they are intending to achieve.

Q170 Mr Caton: Another concern that has been raised with us about CDM credits is that a lot of the investment is going into reducing emissions of exotic gases such as HFCs. You have addressed this in your submission to us and said that the opportunities for abating exotic gases are likely to dry up. Can you tell us a bit more about that and what it is likely to mean both for the CDM and the ETS?
Ms Hampton: HFC23 destruction is a big volume of projects. Basically, when you produce an ozone depleting gas HCFC22 you have this by-product called HFC23 which has a very, very high global warming potential, thousands of times more powerful than carbon. In overall emissions terms it is actually quite small, but the individual molecules of the gas are very powerful, and so, obviously, that provides you with a little bit of investment and very, very high returns because you get a lot of carbon credits that you can sell from it. A lot of those projects are very easy to do, they are less than 20 cents a tonne to reduce, very, very high volume projects. They will dry up, but that will depend, in part, on a decision that will be taken in the context of the UN climate change negotiations, which has been delayed from Nairobi to the next one, which is about compatibility between the Montreal Protocol and the Kyoto Protocol. I can go into that in detail if you are interested, but in a nutshell the door is not quite closed on more of those projects coming into the pipeline. If they do, those will clearly delay investment in things that are further up the abatement curve, that are a little more costly and maybe are more in line with sustainable development.
Dr White: One other thing that I would add to that is that these HFC23 type projects deliver tens of millions of tonnes each. When they have gone, you have then got to look to projects that are doing one or two million tonnes a year each, much, much smaller; so the upfront cost of developing these projects gets a lot more difficult, and that is why you are looking for the CDM Executive Board maybe to do more of a programmatic kind of CDM where, once you have got the methodology done and you have got this kind of process approved, then you can turn the handle and these things will pop out. Otherwise, if you have got to start looking at very small projects, it is going to be much more difficult to justify the overheads for getting those emission reductions. So it is a concern, and I am concerned about that.

Q171 Mr Caton: Can you give us a ball park figure for the timescale for the dry up?
Ms Hampton: It depends on the decision that will come out of the UN Framework Convention out of the Kyoto Protocol negotiations. If they decide that new HCFC22 plant should not be eligible for CDM crediting, then there are still quite a few projects out there and those projects will probably dry up in the next couple of years. If there is an open door on that, and that depends on negotiations under the Montreal Protocol as well as the Kyoto Protocol, then those projects could go on for a long time, and most of us think that would have a detrimental effect on the carbon market, not just because of the high volume of credits and it delaying other investments, but also because it could encourage greater production of ozone depleting substances.

Q172 Joan Walley: I have to admit, listening to some of the evidence that we have heard this morning, it almost seems as though we are all having to learn a new language and a new way of understanding the world, so please bear with me. What I am trying to get to the bottom of is that there are some commentators, and I think the City of London recent report was one, which say that there has been a lot of trading, and yet, from the evidence that you have given to us, my understanding is that you are saying there has not been anywhere near enough trading and that there is a real reluctance by those who have allowances to actually use their excess allowances for what the scheme was aimed at in the first place. Could you perhaps help me to understand this in layman's terms?
Dr White: I think you have to differentiate between trading and people changing their operating behaviour and actually emitting less greenhouse gases. Yes, we are seeing a lot of trading whizzing around the markets. A short anecdote: I did not understand why the carbon price was only 20 or 30 euros a tonne when calculations said it should be 60, and I said to my trader, "Why is this?" and he said, "Well, you guys pay us to come here and trade and if we do not trade you think we are not working, so if the gas price moves a little bit, I move the carbon price a little bit and do some trading, or if the coal price moves I do some trading." You are not actually changing people's behaviour when that goes on. So, you are seeing a volume of trading going across the carbon markets, but in terms of people radically changing their operating behaviour across Europe or making large investments in Europe, you are not seeing much of it. Does that answer what you are about?
Ms Hampton: I think the question you were asking was about the industrials that are sitting on their allowances, which kept the price artificially high in

Phase 1, and that was because there are two types of actors. You have got the power companies, which are used to trading, they trade gas, they trade power all the time, and so adding EUAs on to their trading platform is not very complicated, but then you have got the industrials, individual installations, and they may have a compliance officer whose job is to ensure that particular installation does not fall foul of environmental regulation and is not incentivised in any way to trade. So, even though a lot of these installations received surplus allocations, they never ended up selling them and so the price stayed artificially high. Now we are starting to see the price come down as people realise that there is massive over-allocation in the first phase, but, of course, that problem would be significantly reduced if the emissions reductions in Phase 2 are actually brought in line with Kyoto targets.

Dr White: I think it is fair to say that the utility companies on the whole were not given enough allowances to meet their emissions, which was the whole idea, and yet the people who have got more are some of the industrial companies who are not used to trading. The people who know about trading are the ones who need to buy allowances because they are short; the people who are not used to trading are the ones who have got too much. The music will have stopped by the end of next year, by which time we expect the price to have collapsed to zero in the first phase.

Q173 Joan Walley: Am I right in thinking that the whole purpose of trading is to, somehow or another, incentivise the investment which is needed in the new technology that is going to reduce the carbon emissions, and, if so, how do we reach that point?

Dr White: You do not have to trade. All that a company needs to know is that if it emits carbon dioxide there is a penalty. That is what you have got to know. If you emit carbon dioxide you have to give up one of these allowances—that is what you have got to know—and the amount of money you are giving up, if you like, is the price of the allowance. In order to get people to change their behaviour, they need to say: "If I burn a little bit more gas and a little bit less coal, then I have got some allowances which I can sell, so I am changing behaviour, so it is working", or, "If I think the price is going to be above 15 euros for the next 10 years, then I will build my advanced coal power station or I will shut my old coal station and build a gas station", or something like that. That is how you want people to think about it. What people are doing on day-to-day trading, I think, is neither here nor there. It is: are they changing the way they operate their plant? Are they investing in new kinds of low-carbon intensive plant? The carbon price will give them the signal whether to do that or not; our difficulty is the carbon price is too volatile and it is not visible enough into the long-term.

Ms Hampton: There is a significant human capacity element that I think you are referring to, which is that it takes a long time for people to understand that, and we have noticed in our business talking to clients that there is a significant learning curve, and this is why some of the companies that participated in the UK ETS were more comfortable with the EU ETS when it came in and why European companies will be more comfortable in Phase 2 than, say, the Japanese if they start trading. There is a significant understanding. You need to put teams in place, you need to train staff and all that takes a long time. Industrial companies are now starting to understand that, either by hiring intermediaries or by training up their own staff, but that process takes a while. I think a lot of companies were hoping the EU ETS would go away, and there was an onslaught to get rid of the EU ETS about a year ago, but now that people realise that it is here to stay, I think you will see them behaving slightly more seriously in the future.

Q174 Joan Walley: When we are told that there is 20 billion euros of trading going on, it does not mean that much if the penny has not dropped, especially if we have not got a new corresponding phrase for whatever the penny is when we are trying to understand carbon trading.

Dr White: Basically, people have been given free allowances of that kind of value, and either they have to hand them in or they can swap them with other people. That is what you mean by a market of that size.

Q175 Mr Hurd: Coming back to what you said before about the ETS being here to stay, in your view does that run across Europe? Is that a comment specific to the UK? We have picked up signals, particularly from some of the utilities, that this is across Europe? For example, attitudes in Germany are completely different.

Ms Hampton: I work also on the High Level Group that was referred to earlier, and have spent quite a lot of time in Brussels of late, in Germany and in other places. I think that there is greater acceptance in the UK than maybe in other countries because we have a history of emissions trading. We also have liberalised energy markets which makes it more comfortable, people understand some market-based instruments more. This is also true for the Netherlands, clearly, and Scandinavia. So, those countries that operate in a similar way to us have the same kind of understanding. Of course, in countries where their energy systems are run in a different way, the understanding is slightly different, and you have countries like Germany and France where they have an a priori support of environmental regulation, and they have done good things in certain areas but their industrial base has not yet really accepted the idea of emissions trading, and it does differ between sectors and it does differ between companies. For instance, if you talk about RW or EON you will get a slightly different approach. You cannot say that some countries are for or against, and that is also borne out in the ministries of different countries. In Germany, for instance, the environment ministry understands emissions trading, so does the finance ministry. The industry ministry does not like it and the chancellery realises that it is more important but is looking for more support from businesses, and I think we are starting to see that emerge. You

probably heard about the Corporate Leaders Group yesterday. We are starting to see more European businesses engage, we are starting to see the emergence of business leadership also in Germany, and then you have those countries, like Spain, for instance, which are very fast growing and have very, very tough Kyoto targets, and I think there the business mood depends very much, again, on who you talk to. Some companies that are cleaner, that have more modern plant, like Iberdrola, for instance, in Spain, are very much in favour of emissions trading and the slower, dirtier companies are against, and those interests are naturally part of the political process that governments are trying to deal with. Over time, as you move away from grandfathering to a system with more auctioning, it will put people again on more of a level playing field going forward, so some of those difficulties will start to iron out as you get more familiarity. Across the Commission now there is certainly widespread acceptance that the ETS is here to stay, even Vice President Verheugen, the Industry Commissioner, has managed to discuss with a number of his trade associations the need for the EU ETS to be here to stay, and I think there is now growing acceptance of that within Europe. That does not mean, of course, that a lot of sectors want the EU to move too far ahead of others. There are those that believe that the EU can gain a significant first-mover advantage and you have to lead in order for others to follow, but there are still those that say you cannot lead without followers and we need to slow down a bit. I think a lot of that depends, not on your strategy but on your tactics in terms of how you think you can get the US, China and others to move and so I think the disagreement is really at that level at the moment.

Q176 Chairman: While we are in this rather frustrating phase of moving towards less allocation and more auction, do you think there should be a direct relationship between a country's Kyoto target and the limits under its National Allocation Plan Phase 2?
Ms Hampton: A direct relationship between Kyoto and NAPS, yes.

Q177 Chairman: Some of your members have got much tougher Kyoto targets that others. Should that be reflected in the National Allocation Plans?
Ms Hampton: Absolutely. You have got three options in your National Allocation Plan. You can either make your traded sector reduce more, you can introduce other measures that take some of the pressure off the traded sector—say, for instance, in the domestic sector or transport—or you can buy in credits from overseas, either through the private sector or the public sector. The problem is that the other measures, often transport and measures in energy efficiency, and so on, do not tend to deliver very much and so the EU ETS is the easiest way to ratchet down emissions, and, for the reasons that Tony explained, most of the money is flowing out into emissions reduction projects around the world—that is the way the system is designed—but there has to be a direct link between national allocations and Kyoto targets because, from an investor's point of view, you want to speed up the time between which politicians give signals and investors invest money and so politicians commit to targets. They committed to Kyoto targets in 1997, those were rolled into EU targets in 2001 through the burden-sharing agreement, but it really was not until recently that companies actually started investing. We do not have that much time to wait looking forward between political signalling and investment, so consistency is absolutely essential. If the EU is not consistent with existing political agreements, then investors will say, "Why should we believe your 2020 targets? We might as well just wait until 2015 and see if you are serious", so that is not a situation which we should replicate.

Q178 Chairman: Does every country accept the logic of that argument and are some still trying to say, "Well, actually, we do not have to make such big cuts in the areas not covered by the ETS. We can go for a fairly easy target for our Phase 2 NAP"?
Ms Hampton: If they can justify that, but to my knowledge very few countries have been successful in reducing emissions in other sectors.

Q179 Chairman: What I am really asking is do all the countries, therefore, accept that they are going to have to have Phase 2 targets which do reflect their Kyoto target?
Ms Hampton: It depends which ministry you talk to. A lot of the ministries of environment lack power within their own countries and so they farm out the responsibility of setting caps to the Commission because the Commission is more powerful than the Ministry of Environment within their jurisdiction, so it depends very much on the country. The Commission realises that it has the legal and political authority to do this and will have to do it. Bad news come from Brussels, right, that is the easy cop-out for a lot of countries, and the UK has not got a brilliant track record that either.

Q180 Mr Stuart: The whole aim of the ETS is that we send consistency signals and get investment for a low-carbon future. What are the risks and issues arising out of the possibility of having a zero price for carbon next year? You said these people are investing, smartening up, getting to understand trading. If it goes to zero next year, are there any long-term consequences?
Dr White: I think what has been interesting is that we have seen in the last few months a separation of the Phase 2 price and the Phase 1 price. Clearly, the Phase 1 price is in freefall, or going down a bit, and the Phase 2 price is staying up there. However, do not let us kid ourselves. If Phase 1 prices fall to zero, I do not think the market would be upset by that because, hell, if they have not heard now, they should have done and there is no-one to blame but themselves. If you look to Phase 2 though, there is the possibility that if gas prices were to collapse the carbon price would go right down as well. That would not be very helpful, would it, even though, if the carbon price goes down, it means that we are

meeting our objectives anyhow. It is for those reasons that I feel the EU ETS needs to be supplemented by some additional measures if we want to get the fast investment in, and so we have proposed, and it is in the memorandum, quite obliquely, that we should introduce something called a Climate Change Duty, or something, so that if the average of the Emissions Trading Scheme Allowance, the EUA, fell below some floor, let us say 15 euros a tonne, then a carbon tax, if you like, or a duty, is levied on the difference. So, if the price fell to 12, this levy would be three. If the price was 20, the level would be zero. The reason that we, or I at least, like that is because, post 2012, we anticipate that governments will be auctioning a large number of their allowances and so governments will get used to the income that comes from auctioning allowances. Governments are a bit like drug addicts—but do not quote me—in that once they get a tax, they are keen to keep it. The key thing is not so much what the Government is going to do as what does the market think they are going to do, what investors think they are going to do. If such a tax were introduced, which effectively provides a hedge for government income, then maybe investors will think, "Yes, this is here to stay", and the UK may introduce this scheme which works alongside, but separate from, the Emissions Trading Scheme. What we also like about that is, if that were to be introduced in the UK and it was not introduced in Germany, France and all the other European competitors of ours, then the UK would be at an advantage if the emissions price is above this floor. If the price was 20, 30, 40, or whatever, then UK industry would have the confidence to invest to reduce emissions and, over a ten-year period, there might be some things that are available at five, 10 euros a tonne, whereas someone on the Continent would not have that kind of confidence, would not be able to do it. That is why we think the Emissions Trading Scheme is a great scheme but, because we are worried about the need to make some decisions in the next five or 10 years that will be with us for the next 40 or 50 years, it maybe needs a little nudge of this sort.

Chairman: That is a very helpful analysis. I must say, I entirely share your concern about the addiction of governments to revenue streams.

Q181 Mr Hurd: Picking up on that, there is an argument that the real value of the ETS is as the nucleus of a global carbon market which you touched on before. I have got some questions about how we might get to that ideal situation. Coming back to what you were saying, your misgivings about this approach and the fact that investors will attach some discount to a market price for carbon, you are effectively talking about putting a floor.

Dr White: A floor on the cost of emitting carbon, done partly by the EU ETS or partly by a hybrid tax scheme.

Q182 Mr Hurd: It does not have to be done through some complex sort of tax structure? Can you set a floor like a currency band?

Dr White: No, you cannot interfere with the EU ETS, that is ruled by Europe or hopefully by the world. What we can do is introduce domestic measures that give it a little bit more certainty, give investors in the UK economy more confidence.

Q183 Mr Hurd: Why could it not be done at an EU level?

Dr White: It could be as well, but I am saying it is possible to do it by the UK itself, it does not have to be done by the whole of the EU. If the EU wanted to put a floor, would you necessarily believe it? How would they do it?

Ms Hampton: It also depends on the investment cycles of different countries. Germany has got to replace 20% of its capacity in the next five years; the UK has got similar decisions going out to the middle of the next decade, so Germany and the UK have to take power sector decisions earlier than other countries and so they need longer-term certainty more than, perhaps, Poland or the Czech Republic. There is a question of ensuring that you are using carbon for finance purposes in the energy sector rather than as a way of achieving low-cost reductions which for many countries it still is.

Dr White: Going back to your suggestion, what you could have in Europe is some organisation that is responsible for the carbon market and has a target for what the emissions reductions or the emissions target for Europe is over the next 50 years and then, looking at the EUA price, decides to buy allowances when they are cheap and sell them when they are expensive; in other words, to create a short in the market. That could work. If you had confidence in that, then you would not need my climate change duty. If you could get the Europeans to get together to do that and show after a number of years they were capable of doing it sensibly, then it would work. It is a bit like controlling inflation by adjusting interest rates. The Bank of England has got it now only really because it showed it was doing a pretty good job beforehand anyhow and people had confidence that they would do it well. We need an institution like that for Europe and then I would argue we would need it for the world as well.

Q184 Mr Hurd: It is like a reserve bank acting in the currency market?

Dr White: Yes. So in that case, I agree with you but I am saying at the moment though we do not have an institution of that kind of confidence; therefore, we need something that works separately.

Q185 Mr Hurd: That is interesting. Could I take you back to the argument that the EU is a stepping stone towards a global market. There is a hotchpotch, a mosaic of these kinds of schemes popping up all round the world, the most interesting one is in the United States. What is your perspective on these schemes as to their seriousness and potential for life?

Ms Hampton: There is now an awful lot of bills on the floor of Congress and the switch in Congress has meant that a lot of those will come out of committee now whereas beforehand they were blocked. Some of the range of emissions reductions required are in

line relative to business as usual with what the EU is doing; some are a bit more lax. The mid-range of US proposals is returning the US to 1990 levels by 2020, which does not sound very ambitious from a European point of view, but that is currently the middle range for the US. That is a significant reduction against business as usual but not in absolute terms. What has happened in California is that they have said they are going to design a scheme and trading will start in 2012. Realistically, by the time the California scheme is up and running there will probably be a US scheme, so what they are trying to do is get ahead of a curve and have the technical discussion ahead of the one that happens at federal level. Obviously you have got the RGGI scheme in the north-east states, which is quite weak, but I think again it is a learning by doing approach.

Q186 Mr Hurd: Why is it weak?
Ms Hampton: Because it has got a price cap, and I think in the same way that because the EU went out early Phase 1 was weak; in the US RGGI went out early so RGGI is fairly weak. I think that is the political price you pay for introducing a scheme. Most commentators believe that the US will start doing something significant by the end of the decade. Some people argue, in fact, that industry may choose to do a deal with the Bush Administration because environmental regulation in the US has traditionally been brought in under Republican administrations because industry would rather deal with Republican administrations than Democrats, so we might see something before the end of the Bush Administration or something that is pretty far down the development road by the time he leaves office. It depends who you talk to, and I am going there in a couple of weeks to have that conversation with some people. When you look at other countries, Australia has said they are now embracing emissions trading. If you talk to a number of developing countries, even though they will not say this in the climate negotiations, because that is a formal negotiating forum, in private a number of the major emerging economies are starting to look at concepts resembling emissions trading on a sectoral basis and using carbon finance and one-way targets which are the first step towards a mandatory scheme, a lot of countries are thinking about that now. If the EU can hold its nerve I think the decisions that will be taken tomorrow are perhaps the most important for the carbon market in the next three years. If those decisions are credible then that will have a major impact on how fast others develop. There is an issue about compatibility of linking schemes so the EU and the UK Government and, indeed, those already in the scheme, companies like ours and emitting companies, need to go out and do a little bit of emissions trading evangelism around the world and ensure that people have long-term convergence of these different systems in mind when they are designing them. You will start with a patchwork but we need to get to a place quite soon where those systems do converge.

Q187 Mr Hurd: Could you explain to us why that is important because stock markets and the whole City are in orbit. Why is it important they converge? Is it a liquidity thing?
Ms Hampton: It is important if you care about cost efficiency. Clearly, people can already arbitrage between different markets even if they are not formally linked. The financial sector can do that, but you will never get the efficiencies unless these different units are fungible with each other and at the moment CDM provides, in a way, an international carbon currency because it is backed by an international verification system. Having that central monitoring, verification and compliance system somewhere in the system is absolutely essential. That is what Kyoto provides and that provides the yardstick so a ton of carbon is worth a ton of carbon everywhere. If you increase the fungibility of these units, then you increase the economic efficiencies. Of course there will be political differences and sometimes you will lose some efficiency because countries are moving at different speeds or have different political objectives with their schemes.

Q188 Mr Hurd: What do you see as the main barrier to stitching together the mosaic?
Ms Hampton: The compliance system is the most important thing.

Q189 Mr Hurd: What is the biggest barrier to that though? What is the biggest obstacle, the biggest challenge?
Dr White: If you take the Californian scheme, you could have a Californian scheme that said if you are a plant operating in California and you emit carbon dioxide, then to meet your obligations either you surrender one of our certificates, or you can surrender an EU certificate. That they could do. We could not do the same in Phase 2 because our scheme is backed by the Kyoto protocol and the issuance of the AAUs, the Assigned Amount Units, which are things on the Kyoto protocol that allow a country to emit carbon dioxide. It is because of the quality, as Kate was saying, of the compliance and the verification of those AAUs, our national emissions, that is the highest standard of emissions verification and these other schemes might not have the same level of quality.
Ms Hampton: In a nutshell, say a California scheme started early and linked to the EU scheme, if a European company bought a Californian credit, then the European taxpayer would be funding an emission reduction in California, because when the European company handed that allowance over to the government for compliance, the government would not have anything it could surrender under the Kyoto system to show that it was a verifiable ton of carbon. You need to find a way to deal with that issue if you are going to link the schemes directly, but if you use CDM as the common currency then you do not have that problem because CDM is a verifiable unit. If Californians trade CDM credits with the EU that problem does not arise.

Q190 Mr Hurd: What is the right institutional framework for such a green, global carbon market?
Ms Hampton: You have to have an international verification system. Countries can design around that and have bottom-up schemes but somewhere there has to be an international verification system. People talk about bottom-up schemes, but if you want to make those compatible there has to be a yardstick of some kind.

Q191 Chairman: As a practical matter then, it is perfectly possible to see exactly that you could create such an international platform, but presumably the difficulty is entirely political on both sides: neither the EU is going to be falling over itself to find a mechanism which would be verifying what is happening in America, nor would the Americans be very keen to come into such a scheme.
Ms Hampton: The previous US administration was the most aggressive on compliance and transparency out of all the countries and they designed the compliance system and the monitoring and verification systems that are now in Kyoto. I think it really does depend on who you talk to whether you think the US is willing to sign up to a compliance system or not. I think the US would accept international convergence, it may not be able to ratify a treaty because of the Senate rules that you need a two-thirds majority, but if you talk to US legislators they understand the need for convergence. Because the EU has done so much learning by doing and has institutions, already you are starting to see some of the mistakes and some of the right decisions we have made play out in the US in terms of those technical discussions. There is an exchange but it could be a lot better and a lot deeper.

Q192 Joan Walley: Could I take you two steps back. You talked earlier on about the weak environment ministers hoping that perhaps the European ETS would wave the big stick. Could you give the Committee some idea of what your guess is as to how far the Commission is likely to go on amending the proposed National Allocation Plans for Phase 2 and perhaps tell us how much power the European Commission has to do that?
Ms Hampton: The Commission issued guidance in January but that guidance was issued before the 2005 verified data came out, so the Commission again was stabbing somewhat in the dark when it issued its guidance. What it said was it will take its own guidance and the 2005 data into consideration. The 2005 data is important to ensure that there is not over-allocation so you are not in breach of state aid rules by giving away too many free allowances, so a combination of that. Obviously the Commission has not specified exactly how that is going to happen because that would be market-sensitive information, but if you do that analysis most people think that would be in the range of a 10% or more reduction across the board against National Allocation Plans. That would be differentially applied between different countries. For instance, it is unlikely that the Commission will touch the UK cap but it might look at some of the allocations that the UK has given to individual installations or industry and say, "You slightly over-allocated here and you need to re-allocate". Countries that are on track for Kyoto, their caps probably will not be touched but their sectoral installation-based allocation will be looked at in line of state aid rules. Some of the weird and wonderful ways the Germans have fixed their long-term free allocations for coal-fired power stations are definitely going to be challenged because that is in breach of some of the rules. Countries that are not in line with Kyoto, the Commission will look very hard at their caps and make sure they have substantiated their CDM purchasing or other measures to make sure the numbers add up. We are expecting, hopefully, that the EU will do a roughly 10% cut across the board against draft allocation plans.

Q193 Joan Walley: Just looking ahead to Phase 3, what is the most crucial thing that needs to be changed there? Is it this long-term issue you were referring to earlier? How much political will do you think there is to look at the changes in Europe?
Ms Hampton: There are two very important pieces. One is auctioning, we need to move towards a system with more auctioning and we believe, as do a group called European Carbon Investors in Services, which includes 13 international investment banks and other recently-formed associations, that there should be 100% auctioning for the power sector, differentiated sectoral benchmarks and some combination of auctioning for those sectors subject to international competition. We will not know what those sectors are until we know what the international agreement is, so some of those decisions will be slightly dependent on that. The other thing is this long-term visibility. It is okay to have five-year allocations so if they allocate for Phase 3, for Phase 4 you already know what the EU-wide cap across the whole traded sector will be, even if you do not know individual company installations, because businesses will already know the rules of allocation, the mechanisms for auctioning and the overall cap, they will be able to risk-adjust what they think the price is going to be. Companies are used to having risks and dealing with those, they just cannot deal with complete uncertainty. Long-term visibility does not preclude having five-year phases but you need ten-year visibility and you need that written into the legislation in a way that is credible because just a bunch of environment ministers saying, "It is minus 20%" does not really amount to much.
Dr White: The point there that is so important is it is not the allocation of allowances that determines prices, it is the number of allowances, so you give visibility on the number of allowances that are going to be around there in Phase 4. That is all the industry really needs.

Q194 Mr Hurd: Picking that question up about an EU cap, should that be taken out of the hands of national governments in terms of the fourth phase, that long-term visibility process?

Ms Hampton: I would agree with that. There is a precedent for that in that the EU agreed a Kyoto target internationally minus 8% against 1990 levels and then burden-shared it amongst the Member States. I do not see why you could not use the same process again for the EU-wide cap because obviously the political ambitions will be set 10 years out and you should have a cap in line with that set across the EU. Then national Member States have to argue their case within that cap, otherwise you get a general race to the bottom which is what we have had so far.

Q195 Mr Hurd: You have to build in some flexibility not least because the science may change.
Ms Hampton: Right.
Dr White: Also if you are auctioning, this becomes less of an issue, people have to buy them.

Q196 Mr Stuart: What impact would the inclusion of aviation have on the scheme?
Dr White: Sometimes I do not sleep too well at night because I am looking at Phase 2 and seeing that we have got maybe the 10% cut that Kate has just mentioned, but there is the Russian bear sitting there with an awful lot of allowances that it could give to governments and that would influence the CDM market, so maybe there would not be quite enough demand in the EU ETS or we would like a little bit more. The inclusion of aviation, as far as I can see, could be something that would just be a demand for more allowances which could help the price be higher. I think it could be quite helpful that way. I do not see the inclusion of it necessarily changing people's behaviour about the amount of air transport there will be in the short-term, but I could see it as an extra demand function for these allowances.
Ms Hampton: It basically distributes the cost of mitigation across air travellers because to reduce emissions in the aviation sector you need to change the design of planes, et cetera, these are long-term investment decisions. If they are participating in the carbon market then they are bearing some of the cost of reducing emissions across the economy.

Q197 Mr Stuart: I do not know how much you have gone into this, but what potential do you think there is to reduce emissions in the aviation sector?
Dr White: I am not an expert in this area, but I would say, short-term, pretty low.
Ms Hampton: They would mostly be buying in credits.
Dr White: All they would be doing is buying credits, helping the demand for these credits.
Ms Hampton: Again, if you have a long-term, robust signal then it will get the designers to start thinking about smarter planes.
Chairman: That is very interesting indeed and we are most grateful to you for coming in. I hope we can keep in touch with one another.

Supplementary memorandum submitted by Climate Change Capital

PROPOSAL FOR A HYBRID CARBON-TAX SCHEME IN THE UK

The recent volatility in the European Emissions Trading Scheme has underlined the fact the revenues anticipated from an emissions reducing investment will be very uncertain. Investors will, therefore, apply a large discount to emission related revenues in any investment appraisal. Such discounting is commonplace in the commercial world. The price of oil, for example, is currently over $70/bbl, yet no oil companies are investing in projects that require over $40/bbl, or even just $35/bbl, to be financially viable. We can therefore expect a trading scheme, such as the EUETS to be good at influencing an operator's short term behaviour, but not so effective at encouraging investment. Of course, with time, investors may become comfortable with the behaviour of the EUETS and be willing to apply less of a discount in the investment appraisals—but we may not have time, especially if the concerns of Sir David King are to be believed.

Were investors confident that the price of allowances would not fall below a long term floor, they would be willing to commit capital. However, only Governments are capable of providing such support but are, in our view, unlikely to do so at a sufficiently high level to prompt the necessary change in investment behaviour. On the other hand, it is not the price of an allowance alone that drives investment decisions but the expected penalty associated with emitting carbon dioxide. If, for example, the price of allowances were to fall below, say €15/tCO_2, a Government could increase the Climate Change Levy, or introduce an adjustable carbon related duty, to make up the difference. This would give investors confidence of the minimum long term returns they would enjoy, or charges they would avoid, by adopting low carbon technologies.

Such a hybrid scheme may be particularly attractive to the Government in the post-2012 era. The disclosure that the EU Governments had over allocated emissions rights to installations suggests that, after 2012 these allowances will not be distributed free of charge and will be auctioned. As a consequence, the Government will enjoy a new revenue stream, to which it may become addicted, but these revenues will fluctuate in line with allowance prices and these, as we have seen, are volatile. By introducing the adjustable duty, the Government would ensure that their carbon related income will not fall below a particular floor. There is nothing to stop the UK introducing such a scheme unilaterally; indeed, it could provide UK industry with a competitive advantage. UK companies would be able to consider a range of short and long term options to reduce their greenhouse gas emissions. Without the adjustable levy, our continental partners would be restricted to measures that are financially viable in the short term alone.

To be effective, industry would need to be convinced that the adjustable levy mechanism will not be abolished by some future Government, which would require a cross-party consensus. We can but hope.

December 2006

Wednesday 6 December 2006

Members present:

Mr Tim Yeo, in the Chair

Colin Challen
David Howarth
Dr Desmond Turner
Joan Walley

Memorandum submitted by the Carbon Trust

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 by working with business and the public sector to reduce carbon emissions and by capturing the commercial opportunities of low carbon technologies.

The Carbon Trust believes that the EU Emissions Trading Scheme is a driving force for businesses interested in reducing CO_2 emissions, and as such welcomes the Committee's inquiry into the lessons learned from Phase I of the Scheme.

For the EU ETS to achieve its environmental goals, deliver price stability and certainty, and ensure a level playing field across Europe, some changes should be introduced in the next phase of the system. The Carbon Trust believes, based on extensive research, that the next phase of the system should begin the move away from issuing 100% allowances and should introduce an element of auctioning. Clarity about the future of the scheme beyond 2012 is essential, and this should be a priority for action by the EU Commission.

I have enclosed a copy of our recent report, "Allocation and competitiveness in the EU Emissions Trading: Options for Phase II and beyond" for your information [not printed]. The sections on Learning from Phase I (pp 6–7) and the challenges set out for Phase II of the EU ETS (pp 8–9) address numbers 1, 3 and 4 of the issues the Committee's inquiry will explore. I have also enclosed a previous report, "The European Emissions Trading Scheme: Implications for Industrial Competitiveness" [*not printed*].

Michael Rea
Director of Strategy and Markets

October 2006

Witnesses: **Professor Michael Grubb,** Chief Economist, and **Mr James Wilde,** Head of Strategy, The Carbon Trust, gave evidence.

Q198 Chairman: Good afternoon and welcome to the meeting. Thank you for coming in again. You are familiar with everyone on this side of the table. Before we actually get into the nitty-gritty of emissions trading, given the experience you have now had of working with business, I wondered if you would just like to say a word about how much awareness there is in the business community now of climate change and, as we would see it, the very urgent need to start cutting emissions?
Mr Wilde: Yes. Awareness levels have really been rising over the last couple of years. I was looking at press mentions in the media and three or four years ago there were about a thousand quotes of climate change per quarter and that has gone up to about 6,000. So that has created a huge amount of emphasis upon this issue. The business sector have taken that to heart because that is going to affect the way their investors are looking at them, the way their customers are perceiving their products and also the way their employees are perceiving them. So we do track quite carefully awareness levels within the business community of these issues, and also of the Carbon Trust, and over the last two years we have been a big increase in awareness. If one looks at the FTSE board and non-board, awareness levels of climate change have gone above the 80% level and the propensity for action, a real commitment to do something about it, is very high.
Professor Grubb: One other thing I would add is that there is still some difference between the larger companies and the SMEs where, not surprisingly, there is much, much less focus and information.

Q199 Chairman: Yes. You mention a commitment to action. Is it actually being translated into actual implementation of changed policies, or are there some barriers which are still preventing that?
Mr Wilde: Yes, there are barriers. In a sense the drivers are exactly this, the kind of corporate social responsibility, and also the financial costs savings which companies can make, and then the regulatory drivers. But in terms of barriers, one way of looking at it is moving straight from the kind of pure financial cost benefit of the investment, so companies need to find the investment cost up front, and then there are the transition costs of changing their systems which need to be overcome, things like shutting the system down, actually spending some time to understand what to put in place. Then there are some market failures. Things like form billing and metering affects the propensity to act. Also,

within the building stock there is a landlord/tenant serious kind of split incentive in the market where the landlord owns the building and would be required to invest to improve the asset, but the benefit goes to the tenant in the form of lower energy costs. So there is a kind of friction there, but then all the way down to the behaviour aspects. So sometimes people might not be aware of the opportunities for improvement. Even if they have that kind of awareness, they need to do something. Sometimes the senior level champions, the level at which this issue is taken seriously, is increasing but one needs a real senior level champion. When one looks at the materiality of energy costs, if one moves away from the energy-intensive part of the market to the less energy-intensive, energy costs are a small proportion of their overall costs base so if they need to reduce costs or strategically focus, this can sometimes fall off the radar screen, and they will use different criteria to look at investments and it will not get to that same level within the organisation. So they are some of the barriers and drivers. The barriers which are prevalent vary quite a bit across the market and in an energy-intensive industry we are sectors that are covered by the Emissions Trading Scheme. I think the key ones are the cost benefit because with these sectors their energy costs can be over 5% of their overall cost base. But also there is an awareness issue even in that part of the market. So something like the Emissions Trading Scheme helps to impact both those barriers, improve the cost benefit through the price of carbon but also the process of measuring your emissions, coming up with a strategy around trading and a long-term carbon management plan helps to really focus management attention and help people think through options for improvement.

Q200 Chairman: In terms of you and I investing in companies which are developing low carbon technologies, what are the kinds of businesses and what sorts of technologies are getting the most take-up?

Professor Grubb: I can say that we have got quite a wide range of technologies under the innovation and investment programmes at the Carbon Trust. It is hard to focus because we do consider proposals from a wide range of things. Some of the notable successes, certainly ones which have gone on to be floated on the open market, include two fuel cell companies, for example. Carbon Trust Investments has established a separate company involved in waste heat piping between industrial heat emitters and industrial heat consumers. There are still significant opportunities in what is not the highest tech end of the market, we find, but it is hard to answer the question because it is a very broad area.

Q201 Chairman: We saw Climate Change Capital last week and they said that although there is a tremendous potential for what I think the City of London Report called the Climate Change industry, but they do not think there is enough investment going into low carbon technologies as yet. Is that your view as well?

Professor Grubb: I think I would agree with that, and certainly any of these areas require balance, I think, between market push and supply support with technology and investment support, but the major private finance will come to bear when people are convinced there is a market out there for low carbon technologies. One of the limitations at present of the trading scheme is that the financial sector feels it is not sufficient solid in its longer term prospects to be willing to bank against that future.

Q202 Chairman: Yes. Are there any other steps, apart from obviously a higher carbon price—and we will come on to the ETS in a moment—which can be taken to build up that confidence or optimism from the point of view of the investors?

Professor Grubb: I think in some areas there are some instruments. The Renewables Obligation including its more recent evolution in the Energy Review attempts to give some of that kind of security for renewable energy technology and electricity production technology. I think it is hard to put one's finger on any equivalent for industrial energy efficiency technologies or heat technologies, for example, where I think there is a lot more uncertainty about whether and what kinds of supports may be coming forward or whether they just rely on a carbon price which, as I say, at present is hard to predict in a way in which you would want to put a lot of money against it.

Q203 Colin Challen: We have seen the Commission publication, with the first 10 National Allocation Plans for Phase II. What is your reaction to those decisions?

Professor Grubb: I have to say I thought it was a very good decision in the round. We had done quite a lot of analysis in the Carbon Trust about the state of the National Allocation Plan and come to two broad conclusions, one of which was the collective impact was going to be too weak to sustain a credible carbon price during the 2012 period and that one would need to see a collective cut-back of at least 10% in order to be really confident that there was going to be a robust carbon price signal emerging. The other conclusion is that the cut-backs proposed of the surplus across the different allocation plans were very varied. It was not a simple case of all countries being too lenient, there were some much more lenient than others both in terms of cut-backs relative to recent emissions and in relation to Kyoto targets, and I think the approach the Commission took was to take both of those criteria into account. I think it had the courage to take on 10 Member States out of the first clutch and to do so in a way which was clearly differentiated according to what they felt would establish fair criteria in a more level playing field. So I thought it was a good decision.

Q204 Colin Challen: I guess you could say it is a good decision. It is trying to get European countries to meet their Kyoto targets. One question is, do you think that this will actually achieve that? I would

also add, perhaps, as a rider that since we now know that Kyoto is inadequate perhaps the Commission should have been tougher still?

Professor Grubb: The Commission is toeing a fine line. Various discussions could be had ultimately, which would have been the responsibility of Member States, to one of their Kyoto targets and perhaps to consider going further. The Commission's job formally is to enforce the agreement which exists in the form of the Emissions Trading Directive, not to impose tougher cuts per se. I think the cuts imposed were to a substantial degree driven by a judgment about what was required if countries were really going to be seriously on track with their Kyoto targets, and I think that the Commission had a legal mandate to do that. I think going beyond that would have been very difficult, both legally and politically, to be honest, for the Commission itself. Its job is not to actually impose environmental limits; that will emerge through the negotiation of Member States. I would just add one other thing: there is obviously a complication around the fact that the EU ETS caps emissions from about half of European CO_2 emissions and there are other gases to consider as well. So the Commission cannot guarantee that any allocation will deliver Kyoto targets in total. What it was trying to ensure was that these allocations gave a broadly proportionate cut-back to the industrial sectors covered by the ETS. If countries are falling short of emission targets in transport, or other areas, they are going to have to go out and make up the difference through international purchase of the use of the Kyoto mechanisms.

Q205 Colin Challen: Do you think the effect of the announcements will improve market confidence in this scheme, and indeed will it have much of an effect on the forward trading of allowances in Phase II?

Professor Grubb: I think questions about whether a decision will have an impact on market obviously depend upon expectations prior to the decision. I think there had been so much analysis and criticism of the allocation plans in the run-up to the decision, including our own, that the market was already beginning to recognise the Commission was likely to be tough, so to some extent there was a mitigated impact. Sorry, the other part of your question?

Q206 Colin Challen: That was about the forward trading prices, and so on, of allowances in Phase II. Will it have an impact on those? Have we seen that already?

Professor Grubb: It will certainly, as I say, conditional upon the extent to which the market was already expecting that. I have not actually checked the data, but I think for all prices must have gone up somewhat after the decision. Obviously there is residual uncertainty because everyone is waiting to see if the Member States are gong to challenge the European Commission decision. So you cannot say the decision is finalised at all.

Q207 Colin Challen: No, indeed, and when we get all 25 NAPs announced you would expect that perhaps for the first 10 with an average 7% cut that that might change when the review of all 25 has been considered?

Professor Grubb: We have done some analysis to extrapolate. The 7% was an average across all the countries considered in that round. That included the UK, which had a zero cut-back. If you extrapolate the same method, what you end up with is roughly a 10% cut-back in aggregate across Europe. I think there were some pretty clear implications in the Commission's decision that some of the countries still to come forward would be facing pretty hard cut-backs on the basis of their current proposals, such as Poland, for example.

Q208 Colin Challen: In the UK's National Allocation Plan we accepted that as proposed and given that I read a headline shortly afterwards which said that some sectors would be allowed to increase their emissions, it does not seem very surprising that we accepted that plan. I wonder if you could comment on that particular point about this increase, which I only read in the press so we have to take it that it may not be true? Could you comment on that particular aspect?

Professor Grubb: Yes. First, I would guess and judge that the reason the Commission did not challenge the UK Allocation Plan is firstly because it was actually the only one of the ones they were considering which involved any significant cut-back in aggregate from current levels, and also the UK is on track to meet or accede its Kyoto commitment. So there were not really strong grounds on either of those criteria for rejecting the UK plan. However, it is true very much that the internal structure of the allocations in the plan is to cut back the power sector, which accounts for 60% or more of the UK emissions under the ETS, to cut back the UK power sector by a significant margin but to give the other five sectors everything they are projected to need according to the DTI's best estimate of emissions projections. In nearly all those sectors those represent increases. So yes, it is true that all of the industrial energy-intensive using sectors in the ETS have been given everything they are projected to need out to 2012 with zero cut-backs, and in most cases that represents a significant increase on current levels.

Q209 Colin Challen: If our first NAP was considered to be quite tough, and certainly tougher than the rest of the European NAPs, how is it that we can now allow ourselves this luxury of a sort of standstill, if you like? If our competitiveness was not harmed in the first period, if companies manage to achieve the cuts, surely we should be saying we can go further rather than saying, "We've reached a plateau, now let's just take our foot off the accelerator"? Climate change science is saying things are getting worse, so how can we afford that luxury?

Professor Grubb: I personally think the decision to grant all the non-electricity sectors a projected increase is not a view I would share. I think they

should have had some cut-back. I think the risk is that in a sense the ETS now protects those sectors from having to do or think about anything. They have been given all their allowances they are projected to need. They could choose to ignore the issue. Economically, logically you would expect them now to think, "Well, there is a carbon market out there and if we cut back our emissions we will have some surplus allowances to sell." I think our evidence is a little mixed on the extent to which sectors are adopting that stance.

Q210 Colin Challen: What is possible in trying to get the Commission perhaps to insist on a somewhat stiffer NAP for the UK? Can other third parties appeal against it, to try and make it a little tougher?
Professor Grubb: I think it would be very difficult to challenge it, particularly after the Commission's broad acceptance last week. I think the Commission did make some reference to wanting to check compatibility with State Aid rules and obviously there has been an underlying discussion as to whether the granting of free allowances, and particularly 100% free allowances, amounts to a government state aid, and the Commission did acknowledge there is an issue there which is being considered. Whether anyone will consider that and apply that at the specific sector level in this case, I honestly do not know. I cannot advise.
Mr Wilde: One thing I would like to add in this context is around competitiveness. I think it is absolutely right that all sectors should have some cut-back for the reasons Michael has mentioned, but they need to be proportionate to the ability of those sectors to abate carbon, and also in line with their exposure to international competition. So for certain sectors, if you did have a very strong cut-back there could be competitiveness effects. So I think there should be cut-backs but they should be in line with the exposure of those sectors.

Q211 Colin Challen: On that question of State Aid and the Commission's comments on that, which you have referred to, is that the subject of an on-going discussion between the UK Government and the Commission, or has it been resolved, to your knowledge?
Professor Grubb: I do not know the answer to that question.

Q212 Colin Challen: How do you feel the Commission's decision has been viewed in other countries? What has been the response to that? I think we know a little bit about Germany's response, which is a little bit hysterical, in my view, but what about other countries?
Professor Grubb: Maybe I will take other countries first and come back to Germany. I have not seen the full set of responses. There has been concern expressed in a number of countries. I think a couple of the Eastern European countries have been really quite shocked at the severity of the cut-backs proposed and I think there is an underlying tension, perhaps, between how some of the Accession Countries feel about their roles and positions in Europe when now faced with the reality that they are being treated exactly the same as everyone else according to a given formula which applies across all 25 countries and that implies that their view of their projections and allocations was, in the eyes of the Commission, grossly inflated. So I think one source of potential rebellion is from the Accession Countries in Central and Eastern Europe. I think there have been some expressions of concern from one or two other major European countries treated in that first round. We also know the French withdrew their Allocation Plan at the very last minute when it became obvious it was going to be rejected, and they have said they will re-submit very shortly, but there is no question that a lot of the eyes are on Germany and its reaction. I think there are a few things it may be useful to say about that. First, Germany is the biggest country in Europe, the biggest economy in Europe, the biggest emitter in Europe and a lot of countries look to Germany as an indication of what example might be followed and will that be a dominant view. It also, by its own weight, has a significant impact on the carbon market. Second, the German Allocation Plan in aggregate was, I think, reasonably considered distinctly un-ambitious, which might be a generous way to put it, and more to the point, from my perspective noticeably discordant with the view of the German Government on climate change in general. So at almost exactly the same time they were squaring up with the Commission in order to try and protect an allocation which would have implied an increase in general emissions, unambiguously in my view, across the whole economy, they were calling for 40% reductions at the Nairobi Conference. I think there are two halves of Germany and the government is going to have to reconcile that. The third point I would make is that the very strong statements after the Commission decision were made by the German Economics Minister and made particular reference to the new entrant provisions in the German plan, in other words that Germany had attempted to include a provision which would guarantee new entrants into the ETS free allocations for the next 14 years. The Commission said that is illegal under State Aid Rules. You cannot guarantee that level of protection. We are trying to build a carbon market, trying to factor a carbon price in, and you cannot say any new entrant is going to get that degree of protection, which would actually, from an economic standpoint, have acted as a subsidy to the most carbon-intensive power plants in Europe. Obviously, there had been some kind of understanding, shall we say, between the German Economics Ministry and the power sector and new facilities, and it was extremely angry at the Commission declaring that illegal.

Q213 Colin Challen: Of course, we famously went to court with the Commission in the first phase when we were trying to revise our allocation at that time. Are other countries, do you think, likely to follow that example if they still do not like their NAP, or find some other way of challenging it?

Professor Grubb: Since you mention the example, I was tempted to say earlier when you said we had a strong Phase I plan, we do not have ourselves to thank for that, we have the Commission to thank for it! I do not like predicting exactly what other countries may or may not do. I think what is clear is that the Commission had to act. It had to act in a strong and robust way and it has taken the political gamble that by taking on 10 Member States at once and imposing cut-backs on all of them that each individual one will realise it is not being singled out and that everyone is being treated fairly and equally and that if one Member State mounts a challenge it could call into question the whole basis of the carbon market. I do not think anyone really wants to do that in Europe.

Q214 Colin Challen: Press reports suggest that Norway is about to join the scheme. Is that likely, do you think? How would that impact on the functioning of the scheme? Would it set a good precedent to get other countries fully signed up?
Professor Grubb: I think it would set a good precedent, and Norway is in a rather unusual position in the sense that its electricity market is already linked in with the Scandinavian market and therefore it is already subject to quite a few of the economic influences of the Trading Scheme indirectly. I have not seen the proposed terms exactly of Norwegian engagement, but I think the broad principle is that the wider the carbon market the better. Having said that, adding Norwegian emissions to the European total is going to make an almost imperceptible difference to the scale of the carbon market or its carbon prices, so it is actually the institutional precedent which will be far more important. In that area, actually, it is also worth noting that one of the significant constraints which Europe has imposed on itself for Phase II was not being allowed to auction more than 10% of allowances. My understanding is that the Commission has made it plain that will not apply to Norway. If Norway wants to auction more—and it may well because there is a lot of reasons why that would make economic sense—it would be allowed to.
Colin Challen: Thank you.

Q215 David Howarth: The Commission is currently reviewing the ETS. What do you expect will come out of the review? What are the conclusions you expect it to find?
Professor Grubb: How long do we have? James may well want to add some more on this. The Commission review is a pretty wholesale review of the functioning of the EU ETS and its future, so it has focused on lessons from Phase I and emerging Phase II considerations, but I think everyone is really looking at the review primarily with respect to what it may do or say about continuation of the EU ETS post-2012. Let me offer you one unambiguous projection, which is that it will not recommend abandoning the EU ETS, and I think that we are all probably pretty glad. Having got the system in place, the biggest problem is the lack of clarity post-2012 and I think it makes eminent sense for an unambiguous commitment and necessarily, by virtue of timescales, a unilateral commitment by Europe that the EU ETS will continue. I think there are then several areas of topics which will be considered and the Commission has set out a long list of the issues which will be considered in the review, in fact I am getting a little prompting of the various lists which I made. It is going to look at the scope of the directive in terms of the range of installations covered. So, for example, within the current sectors there are debates about the 20 megawatt threshold. That can be re-examined. Also, other gases; currently it is CO_2 only. Should it be expanded to include industrial methane or HFC type gases? Within that, carbon caption and storage is another area of scope and coverage. One additional issue is that several countries, but particularly the French Government is pressing for a formalised system of project-based crediting internally so that, for example, if a company which was in the EU ETS wanted to sponsor some emission reduction activity which did not fall within the scope, it could gain the emissions credits for the savings in its retail stores, or whatever. Then I think there is a whole clutch of issues around how the allocation process is working, the various associated debates about the likely strength of allocations post-2012, and potentially the formulation. So people are talking about should actually you have 25 Member States, each proposing allocation plans? In effect, an implicit implication of the Commission's decision last week is leaving it up to 25 Member States clearly has not worked very well, so they have come in with a formula which says roughly what would be a fair proportion in relation to Kyoto targets. Should one go further down the road of harmonisation of allocation processes between Member States? Should it be a five year period again or should it be a 10 year period, or something in between, or longer, for the sake of investment security? There are a lot of big questions in that area. Then I think there are some additional issues which get thrown up by concerns about industrial competitiveness. I think it will need to look at how serious are those concerns and what could be done about them. In our own research we have laid out three options which could be considered for how the EU ETS could be continued unilaterally, but changed in order to try and protect the competitiveness of sectors where they have a valid cause for concern. I would imagine that the Commission review will look at those kinds of options. So I was tempted, when I looked through the full list of the communiqués to say that the ETS review is mandated to look at everything. I have realised there is one exception, which is that the Commission's document does not include any plans to look at anything to do with price management, price floors, price ceilings or price stability. I think very much the implicit view of the Commission is that it has created a market and it does not want anyone to interfere. Once the allocations have been set, nobody and nothing should impose any other kind of condition or management of the price.

Q216 David Howarth: You have raised a number of issues which I will come back to in a second, but you also mentioned lots of options. Presumably the British Government can have some influence on what comes out of this? You could argue that having the only acceptable NAP puts us in quite a good position, at least in the short term, so what are the key points you think the UK Government should be arguing for which have come out of the review, amongst the various options you have mentioned?
Professor Grubb: I think in several areas the UK is in a good position to argue for certain things and I think those would include an increased role for auctioning post-2012. I think the 10% limit from an economic standpoint does not make any sense. I am not arguing one should try and jump to 100% and, as James said, one needs to differentiate these things by sectors, but I think definitely in some sectors you would expect to see a much more substantial cut-back in free allocations and you then stabilise the market by reintroducing those allowances by auctioning. So that is one thing that I would press for. I have not yet developed strong views on questions like the timescale because there really are pros and cons. I think there is currently a bit of a rush to say, "Let's have a 10 year period next time," but the problem with a 10 year period is that you have locked yourself in for 10 years. So I think the first question is, do we want to do that? The answer is, we do not really want to do that. We would rather have the flexibility of five year steps. However, you then have to say, how do you guarantee investment security for industry, and that might imply that one does need complementary instruments or a credible capacity to say the price in the longer term is going to be in these ranges, even if we have not specified the exact allocations yet. So I think there are some pretty complicated trade-offs to be made there. I think expanding the EU ETS to cover some additional sectors would be desirable. However, it is an instrument which is designed primarily for large industrial facilities and I am not a big fan of suddenly trying to paint everything into the ETS pot. I think there is a case of horses for courses. Auctioning is one unambiguous thing that I would push for, as well as the tools to help a much more rational process of allocations across Member States whether or not it is fully harmonised. I think one other thing I would add from our own work is that there is a pretty deep institutional question underlying this. These are valuable assets. We are talking about hundreds of billions of Euros of assets being given out and we are talking about a situation where the credibility of government commitments, the credibility of longer term expectations and the resistance of government decisions to very short-term lobbying pressures are all very important questions. Having the solution that 25 governments will just come up with the plans which suited their political minds at the time is not a good answer. I think to some extent we have been here before and I think there are some lessons to be learned from monetary policy with the debates which led up to independent central banks with very clear criteria, and I hope the Commission will also look at those institutional questions, although I recognise it might be treading on some pretty delicate ground if it did.

Q217 David Howarth: To make that very specific, would you support the idea of a single EU cap on emissions? If we start from one and work downwards, rather than try and do it the other way round? That seems to be implicit in what you have been saying?
Professor Grubb: I think by the time we are arranging negotiations for the next phase we should be ready for that. Yes, I do, and I think also to build sensibly upon the precedents set in the Kyoto negotiations, which is that also to avoid unimaginable and unbearable complexity in the global negotiations you had a Troika negotiation with the Commission as a permanent part of it which took on a target for Europe along with a legally binding commitment and then go out and distribute that between the Member States. That is how Kyoto worked and I think it would make sense if that is how the next phase of the EU ETS works in parallel.

Q218 David Howarth: Moving on from that, you have mentioned several times the kind of global consequences of the EU ETS. Should the review take into account the possibility of the EU ETS being the kernel of a global carbon trading structure, and if so what would that mean?
Professor Grubb: I think it will take it into account because I think that is quite possibly the reality facing us to an important degree. I would put on it a caveat, which is that there is understandably a combination of interests and reluctance, and concern, outside of Europe about how exactly to handle this. If one talks to Japan or Australia, it is not at all obvious that the same structure on emissions trading would make sense. Australians, for example, have a very different industrial structure and they are going to be wanting to be much more concerned about competitiveness of energy-intensive export-oriented industries. So I think it would actually be a mistake for the Commission's review to consciously try and think, "We're designing the global trading scheme." They are not, they are designing the European trading scheme, which is the biggest beast on the block and probably will be the biggest beast on the block, and therefore will be a focal point for carbon prices, a bit like Saudi crude, or whatever. The question is, how do other things choose to link to that? I emphasise the word "choose". If you are a country on the scale New Zealand, for example, you have got two rather difficult questions to answer. One is, why on earth would we want to shut ourselves out from a global market in carbon? It is a rather small country and generally one wants to be linked with international trade. The other thing is, if you link yourselves to the European market, are you not letting Brussels's decision-makers determine the price of carbon in New Zealand? That is not something which necessarily sounds very good either. So there is a lot

to be thought about and I think there is a risk of being too Eurocentric in one's thinking about the EU ETS design.

Q219 David Howarth: Can I bring you back to another point you have already raised, which is the point about ex-post interventions in the carbon market, because we had evidence last week from Climate Change Capital about the problem you already mentioned about having a stable carbon price being necessary for investment decisions and the idea of having a minimum carbon price, and the way you bring that about would be where the government would intervene in the carbon market by credits taken and retire them from the market to make sure that the carbon price stayed up. I think in the past you have expressed views against that sort of ex-post intervention. Could you just say what your current thinking on that sort of scheme is?
Professor Grubb: Yes, with pleasure, because it is something which I have exercised quite a lot of angst about. I think there are very large drawbacks to ex-post intervention by government. In other words, "If the market does this, we, the government, will intervene to achieve something else." I think there are all kinds of risks which you run about whether governments would do so sensibly, about how the market would then try and game the decision or game the expectations, and that has generally not been a very happy experience when governments have tried to do that kind of thing. On the other hand, I think at least under the kind of structure we have at the moment we do not have any sense of post-2012 certainty and it is not at all obvious that the solution is to suddenly jump to 10, 15 or 20 year commitment periods which will lock us into everything for the next 20 years, whatever, even if climate science becomes radically worse, or if we are in the middle of global negotiations on strengthening, et cetera, and we are in a context of making allocations which, let us be honest, are pretty trivial compared not only with the scale of the problem but also with just the uncertainties in these kinds of projections. The debate around Phase I, in 2005 most analysts and nearly all governments were saying, "Ah, well, you know, our projections are emissions are going up, et cetera. This could be a really tight market, et cetera." I have to say we disagreed with that and I was not at all surprised when the price crashed, because I never believed the projections on which those allocations were based. There is very little sign we have learned very much in Phase II, so again we see a market in which all governments are projecting increases—projections which, in my view, are not fully substantiated by historical evidence or experience—and the cut-backs are still rather small compared with those projections. So the result is you have an intrinsically uncertain and unstable price. To give one very simple example, I do not know if you have had evidence from gas experts here about the gas price, but they will tell you, "We've got a lot of new gas infrastructure coming in. Gas prices could well start falling rather dramatically." If they do, if they take us back to the situation we were in in 2002, the power sector will switch to gas just because it is cheaper and its emissions will go down by several tens of millions of tonnes of carbon. So there is a lot of uncertainty in this market and that is not good if what you are trying to do is support low carbon investment. That was a rather long preface to my answer, which is that we propose a third approach, which would provide not an absolute price floor but a much firmer carbon price base, but which would not involve in any way ex-post intervention or ex-post decision making. The proposal was quite simply that what is in a sense the big weakness of the EU ETS, namely it is an artificial market where the scarcity is entirely created by government, you actually turn into its principal strength, which is to say that government will make available a substantial number of allowances through auctions but at a minimum price, and if nobody wants to come and buy at those prices, fine, those allowances never come into the market. Providing there is a significant volume of auctions and there is some element of coordination across Europe on what that minimum price might be, then in effect you have created a pretty high chance that the price is not going to go significantly below that floor, because if the volume is big enough the market needs some of those allowances. You can also set up a tiered structure, "There will be this number of additional allowances available at this price and this many at this price." I would emphasise that that helps to set a price floor but it does not in any way involve any ex-post adjustment at all, depending upon how the market evolves. It simply says at the beginning, "These are the rules, and if any company wants to come and buy at this price they are welcome, but we are not going to put more allowances into the market at a lower level." We think that is the best compromise.

Q220 David Howarth: That is a kind of reserve price of carbon where the government says, "The social value of carbon is at least this much and we are not going to sell for less"?
Professor Grubb: Yes.

Q221 David Howarth: You have written a piece recently with Jonathan Ko£hler which seems to say that the carbon price which would induce major change will be something like $100 to $150 per tonne. I suppose the question then is, what do you expect the price to be in Phase II and Phase III, and if it is nowhere near that, is what you are suggesting now the way forward to make sure the price rises towards something which will induce real change in the economy?
Professor Grubb: I am pretty sure that figure was tonnes of carbon rather than CO_2, but you are right, I think all these numbers have considerable uncertainty. On all my reading of the economics, if I use the units of the carbon market these days, suggests that you need a carbon price of somewhere between €20 (Euros at the time of CO_2) to start making significant change, if you really want to get big reductions which will really de-carbonise the power sector and make significant inroads on the industrial sector overall, over the next few decades

you need a price which could rise anywhere up to about €50, and that still will not solve the transport problems at all, but somewhere in the range of 20 to 50 will get you a very long way over the next few decades. Do I expect that price out of EU ETS Phase II? No. We might get to 20, if the Commission sticks to its guns and if it is not subject to a successful legal challenge I think 20 plus or minus something is my best estimate of Phase II prices. As I say, if gas prices go down that could prove to be on the high side. We might get significantly lower carbon prices. So I think it will be a while before we see carbon prices at a level which would drive deeper levels of change.

Q222 Dr Turner: Looking at the experience of the first Phase, the financial effects on the UK seem to rather stand out. We were 27 million allowances in deficit and other countries were notably in profit because their allowances far exceeded their actual emissions. So several hundred millions allegedly changed hands, although as far as I can tell there is no actual evidence that a single tonne of CO_2 was cut from emissions as a result. How much money do you think it cost the UK for all of those years?

Professor Grubb: I think there is some evidence that some carbon was cut as a result, but we could come back to that. There is a paradox here because the only sector in the UK which was short and needed to buy was the power sector, which as you say was short by a significant margin and went out and bought, despite which the DTI's own evaluation is that the power sector made £800 million profit, despite having to go out and buy from European counterparts. Obviously, at the end of the day that is still fundamentally money going abroad as part of the Trading Scheme. I do not, to be honest, know the trading volumes and the prices at which they were traded. I think utilities were a bit short-sighted if they bought very much while carbon prices were at €25, but then they would accuse me of the benefit of hindsight. From a national perspective the amounts of money exchanged were extremely small, but I do not have the number to hand. We made some estimates looking forward and a great deal does hinge upon how much abatement you think the sectors will make. If you think the current UK allocation and proposed cut-back for the power sector will stand and emissions would stay exactly where they are, then overall one is going to be looking at, we estimated, buying about 20 million tonnes of CO_2, and if you multiply that by €20 as your best estimate and that is €400 million a year. On the other hand, if the power sector gas prices go down or other things lead the power sector to make quite major changes, the UK could end up as a net seller still and make money out of the system. Quite a lot hinges upon those kinds of assumptions and on how much effort countries and sectors make, but at the end of the day we have created an international market. An international market does not exist unless countries are willing to spend money across borders.

Q223 Dr Turner: But does the fact that the UK's proposed cap for Phase II has not been tampered with by the Commission and other countries have all been cut back, and France's rejected altogether, suggest that Phase II will be a little more evenly balanced between countries?

Professor Grubb: Yes. I think the Commission is making a major effort in that direction and they have avoided the soft option of simply saying, "Here is a load of allocation plans. Let's all try and cut them back by the full amounts." They have been very discriminating on the basis of how serious they think these cut-backs were, and I think the UK has benefited from that.

Q224 Dr Turner: Good. Your recent report describes the UK as one of the most exposed countries in Europe when it comes to external trade effects. Obviously energy-intensive industries cannot avoid competition consumption. Why do you think that is? Why should we be so much exposed? You would expect Germany to be equally exposed?

Professor Grubb: I said "one of" but I did not actually go through the trade statistics of the Member States. Simply because we are a maritime trading nation. We are used to doing a lot of international trade. We still have very substantial export and import industries from outside of the EU to a much greater extent than one would expect, say, of Austria or others more in the middle or Europe, or with indeed less easy maritime trade. That was really all I meant. It was not a more extensive statistical analysis.

Mr Wilde: One point I could maybe add to your previous question about a level playing field is that I think it is important in Phase II that we have more of a level playing field, but when one looks at the competitiveness of various sectors it is useful for them to have a level playing field as well, so in Phase III harmonisation of approach by sector could be beneficial as well.

Q225 Dr Turner: Yes. The engineering employers last week told us that heavy industry has just about made all the serious energy efficiency improvements that it can make without a step change in technology, and there is no evidence of any such technologies, as far as they are concerned, being available. So their argument would be that the ETS is not going to drive any significant carbon reductions from their processes. Would you agree with that?

Mr Wilde: When one looks at the available cost-effective opportunities to reduce emissions below the carbon price, even in the energy-intensive industry sectors covered by the Emissions Trading Scheme one would expect them to improve their energy efficiency and reduce emissions by 5 to 10% across most of the sectors. Some of these sectors also have some substantial opportunities which might be helped to be incentivised by the scheme. For example, in cement there are options to use alternative fuels, to use biomass as a fuel source. So I do not think they necessarily have no opportunity to reduce their emissions currently and I think there is a need to help drive innovation to come up with step change improvements in the long term.

Q226 Dr Turner: What would be your views on the steel industry in particular? The engineering employers think that steel companies are really approaching their theoretical maximum limit of energy efficiency, but it seems that you suggested that steel blast furnaces are much more power-intensive than electric arc furnaces. Does this mean you think there is still room for carbon reduction from steel production, even with current technology?

Professor Grubb: In response to your general point at the beginning first, I think it is actually very hard to know for sure whether companies or sectors have exhausted all the opportunities until there is a real incentive to do so. I think that is actually one of the profound lessons of history in this area. We have had the history of the UK Emissions Trading Scheme, the UK Climate Change Agreements and most of those over-delivered and I think not purely because companies gamed the projections and allocations at all. I think in some cases those processes led companies to realise there may be more things they could do and once the incentives were in place they did indeed find they could deliver those. It is very hard to know what all your opportunities are, starting from today. An incentive does obviously encourage you to go and find out more seriously. That said, I think it is true that these are sectors which have faced significant energy bills for a long time by definition, and with energy prices going up they would certainly be a bit foolish if they were not paying very close attention to the opportunities. I would argue that even within the year 2005 under the trading scheme we saw some examples, maybe more in cement than in steel, where actually companies did find they could deliver more than they had really expected, and in fact the cement industry has said very publicly, "Why are we being criticised and accused of over-allocation? People should be congratulating us on the abatement we made," and to some extent you can trace that in their operations. You have asked specifically about the steel industry and different steel making technologies. I am not an expert in the field. I think one thing we pointed to briefly in our study is that there are different steel making processes. They involve very different carbon intensity and questions about whether the trading scheme really gives the right incentive to move towards the more efficient techniques of electric arc. One of the responses which has been put to me by the steel industry is that that is not really a fair comparison because an electric arc furnace requires scrap. You cannot run an electric arc on ore, so actually they are not really substitutable.

Q227 Dr Turner: It is also displacing the carbon output to the power industry?

Professor Grubb: Well, it is, but the point is the mechanism is so much more efficient that it is still a net substantially lower emitter because you are not having to reduce the base ore in part. I think there is also a lot of truth in that, but then there are also issues—I do not know the scrap industry, but I have been told in the United States the impact of high steel prices has actually meant the whole industry has developed to driving around the countryside picking up old cars and taking them to recycling units or electric arc units. So to what extent there are more opportunities there, I do not know. I think a lot of these things get characterised in a rather black and white way, "We cannot do any more. We have done everything," versus, "There's lots you can do," et cetera. I suspect in several of these sectors the answer is they have paid quite a bit of attention to their energy costs. Carbon costs will make them pay more attention. They have thought of a lot, but they have not thought of everything, and certainly we still see proposals coming through the Carbon Trust on various energy efficiency technologies, energy management systems for companies like this which would still make a useful contribution.

Q228 Dr Turner: So you think that if the carbon price went up significantly they might find something?

Professor Grubb: Yes. How much is very hard to tell.

Q229 Dr Turner: You also talk in your recent report about the potential for participants to gain profits from passing on the market value of their allowances where they have been allocated for free. You go on to say that "competitiveness is not a serious concern in terms of the direct impact of Phase II EU ETS costs. Rather, Phase II is likely to be a phase in which most of the participating sectors can accrue profits from the EU ETS, that can be used to assist investment, for example in low-carbon technologies." What businesses which you have looked at in the scheme bring you to that conclusion?

Professor Grubb: The sector for which we have, I think, unambiguous data is the power sector. Some of the studies we have published have tracked electricity prices. You can see the impact of carbon within the electricity price and you can do the net calculation and, as I say, the DTI's own assessments also indicated that sector was making profits. I do not think that is necessarily a bad thing, but let us put that debate aside. The underlying mechanism is universal, namely if the cost of carbon is factored in by companies in a profit-maximising way such that their sales price of their product reflects the opportunity costs of carbon allowances—if they are making more, they have got to go and buy allowances; if they make less, they can sell those allowances—and you give companies a significant amount of free allowances, they will make the profits. That is very straightforward mathematics for most of these sectors. There are two constraints on that. Foreign trade is the most obvious and the other is, for something like aluminium where actually most of its cost exposure is on electricity price rises and it is not getting free allowances to cover those because those have gone upstream to the power sector, so actually the room for manoeuvre for aluminium is very limited, although to some extent it is protected by current contracts for the next few years anyway. The foreign trade issue is much, much more complicated. It works in the power sector because no one is going to import electricity

from outside of Europe into Britain because of the EU ETS, so the power sector does not have to worry about that. Do other sectors have to worry about it? The answer is, yes, to some degree, depending upon the specific product, the specific market, the specific nature of competition. In our more recent work we flagged and illustrated with a very, very detailed study—and the cement sector is one which I think illustrates this very well—that if you are in an internal inland cement region it is not cheap to haul that stuff over land in large quantities. You can pass the carbon costs through to some extent in cement prices. Whether or not you choose to is a function of lots of other things, of how does the sector really work and get together and how the cement sector tries to determine what kinds of prices it is putting on its product, or how the cement companies determine that. But in principle, if companies are profit-maximising they will set prices which reflect carbon costs. They are getting free allocations. The net result is they make profits. A cement company near a port, however, may find that if it does that and it reflects that cost in its cement price, actually it is jacking up cement prices by 10% and that is enough to attract foreign imports. Will they come in overnight? Probably not. Will they come in over a period of several years if that price differential is maintained? Yes, they probably will. A 10% difference is enough to drive significant cement imports if you are near a port which can handle cement. So what would the sector do? Well, they would probably in reality think in terms of the strategic market rather than short-term profit-maximisation, and decide they were not going to pass all the carbon costs through. They will keep their cement prices down. With the kinds of allocations and prices we have at present, they could add maybe 2% to cement prices and they will cover their losses and break even, compared with the situation without the ETS. My guess is one can usually sustain a 2% price differential without losing a significant market share. But as I say, it is a grey area. What we were really trying to fundamentally say is that the logic which underpins the electricity profits does apply in principle to other sectors but they do face different sets and magnitudes of constraints.

Q230 Dr Turner: Yes. We know the electricity companies, the power companies, did very nicely by this, in fact some people have described their opportunity of profits as scandalous, but can you think of any other UK business or business sector which has actually made a profit out of the first year of the scheme?
Professor Grubb: I do not have any data on price. To answer that question you would need to know two things. One way of making profit is just by having surplus allocations and selling them. I am not a sufficient market-tracker to know exactly who has been selling what, but I do know that every sector other than the power sector had a surplus in 2005. Frankly, if they did not sell it at prices of €20 to €30 per tonne they have no one to blame other than themselves. So if they have not made a profit, they have only themselves to blame for that fact, given the allocations. The other way through which they could make profits is through product pricing, and for that I would need data on pricing in 2005 and try and differentiate carbon price effects that from the thousand other impacts on product prices, and frankly I confess I have no idea if there is any proof that other sectors have behaved and made money in that kind of way.

Q231 Joan Walley: Just on UK businesses other than the power sector which might be affected one way or another, you have not mentioned the ceramics industry?
Professor Grubb: No, I confess I have not studied the ceramics industry. I know very little about it.

Q232 Joan Walley: Do you think there would be some point in actually looking at the situation it is in, given the competitiveness opportunity which it has from where it is produced outside of Europe, unlike the power sector?
Mr Wilde: I was just looking at some numbers actually for the glass and ceramics industry as a whole. Michael mentioned before the potential value at stake and for the glass and ceramics industry it is actually relatively small.

Q233 Joan Walley: I am sorry, what is small?
Mr Wilde: The net increase in costs produced by the scheme over their current value at—and that fraction is actually the value at stake that they have got—is very small, it is under 1% of their profits. The cost increase represents under 1% of their profits. But you are right, in terms of the other metric that Michael was mentioning, international competitiveness, it is relatively high, so trade intensity from outside the EU in the glass and ceramics industry is around $7\frac{1}{2}$% on aggregate. So they are one of the sectors more exposed to international competition.

Q234 Joan Walley: So in terms of sectors which are more exposed to international competition and in terms of what needs to be done in respect of Phase II, of the three suggestions you put forward in your paper, which I think included cross-border, perhaps looking at some kind of international sectoral agreement, what sense have you got of how well received they are in Europe and what kind of discussion is there going on about this?
Professor Grubb: That does move us into some pretty big terrain, because I do not think any of the three options we have outlined are simple, and none of them may be needed for some of the sectors. I think one does have to make a case that a sector has a competitiveness problem, but as I say the longer the timescale, the higher the carbon price, the longer there is a unilateral carbon price difference and obviously the stronger the problem becomes, particularly with respect to new investment. What reactions have there been? I think in the international discourse, by which I mean broadly the sorts of discussions one has in the corridors of negotiating sessions, informal exchanges between

European countries and some others about how to move forward on climate change, in the research community underpinning some of that I think there is considerable interest in sectoral agreements. There has been a number of think-tanks which have proposed the idea, or variants of it. Some industries have started to express interest. It is my understanding that at least some parts of Arcelor before it was bought by Mittal was expressing interest in the global steel sector agreement around carbon, and it does, I think, solve a number of potential problems depending upon the structure. But obviously it is difficult, potentially it is very difficult, and you also have a legal question about what kind of agreement you are trying to strike with whom. Are you actually talking about some kind of deal with the private sector? In which case, who legally is the private sector? Who can sign an agreement on behalf of the steel industry? Who can enforce it on the steel industry? So there are some very big questions indeed underpinning the practical implementation of a sectoral agreement which has teeth, shall we say, as opposed to a voluntary agreement in which the sector says it is going to do its best.

Q235 Joan Walley: So would it be fair to perhaps conclude that the proposals which you put forward do not have that much currency inside Europe?
Professor Grubb: Well, let me continue. I am saying that I think there is a significant constituency which thinks that could be the most desirable way forward and wants to explore whether it can be done, and if so where and in which sectors. I think the second area is border tax adjustments and I have to say again I think it is one which one should approach with considerable caution, but there is increasingly open talk about it and I notice that the high level group on competitiveness had not ruled out the possibility of exploring border tax adjustments as a way of dealing with competitiveness issues. I think there are some pretty strong arguments on both sides, but I do not think it should be ruled out of consideration in the context of a wholesale review.

Q236 Joan Walley: But if those proposals are going to go forward, they are going to have to be driven by somebody, are they not?
Professor Grubb: Yes.

Q237 Joan Walley: Is it the case that you are not driving them forward in Europe at the moment, or do you believe in them so much that you are trying to get support and trying to pursue them?
Professor Grubb: I am not sure who you mean by "you".

Q238 Joan Walley: But you have an advisory role in terms of the Government, do you not, in terms of your remit?
Professor Grubb: I personally do not have a formal advisory role.

Q239 Joan Walley: Sorry, the Carbon Trust.
Professor Grubb: The Carbon Trust has published its analysis and recommendation, which is that all three opportunities should be explored in depth, and since we ourselves have not done any additional work subsequently I cannot really add to what we have already said, and I maintain that view. We should be exploring all three options in depth.

Q240 Joan Walley: When we spoke to the employers, when they submitted evidence, they put forward a proposal which, as I read it, is about having a sort of separate energy efficiency reward and penalty scheme after the manufacturing or whatever has taken place. Do you have any views on the proposal they have put forward? In doing so, they would remove certain sectors from the ETS, so there is presumably some derogation there and then some separate arrangement?
Professor Grubb: Yes. I do have a view. I think from within any individual sector there are always special circumstances which need to be considered. It always appears possible to propose something which looks like it might lead to a number of gains without the pain or the perceived pain of a carbon price and a mandatory system. There are two reactions to that. One is that the track record is mixed. I do not say the track record is bad, but it is very definitely mixed. Sometimes more slightly quasi or softer agreements look like they have delivered things; at other times it is quite plain one has just ended up rewarding companies and sectors for pretty much business as usual. But I think there is a second, quite big consideration, which is that if you think about what we are trying to do (ie what we are trying to do is a 60% reduction by mid-century) that is a big change. That is not tweaking energy efficiency in a few individual sectors who continue to sell exactly the same kinds of products at exactly the same kinds of prices, just with a little bit more effort on energy efficiency around the margins. This is a structural problem. This is a macro-economic challenge and any economist worth his salt says that one of the fundamental factors in an efficient solution is that you have to change relative prices. You say there is a problem with carbon. It should be more expensive. It should be more expensive not only to encourage sectors to be more efficient in how they produce materials, but also so that consumers see some signal about what involved more or less carbon and its manufacture, and where there are sensible opportunities to substitute there are appropriate economic signals to do so. I do not see how the kind of proposal you have mentioned in any way reflects that. On the contrary, I think it tries to protect the status quo in terms of any pricing and you lose the sort of fundamental, if you like, the economist's efficiency of having a carbon price in the economy which allows people to shift around effort according to our carbon reductions, in the most cost-effective way.
Joan Walley: Thank you.

Q241 David Howarth: Bringing us back to the power sector, could I just raise one point about the issue which Des Turner raised about the windfall profits, £800 million according to the DTI. I think your

estimate was slightly lower, 60 to £70 million, but it is still a lot of money. Is there any evidence that the investment plans of the power companies changed as a consequence of having this money? In other words, is this just pure deadweight or is it actually inducing them to do more of this sort of thing?

Professor Grubb: I do not think I could point to any very specific evidence, specific decisions and in so far as there is evidence, it is of a rather different nature and it actually comes back to other problems or other issues in the power sector, which is one reason why I said that to some degree making profits is obviously what industry wants to do, but in the energy and electricity sector we have created a big problem for ourselves which does not appear to be being automatically fixed, namely the privatised sector has not really done much investment of anything in recent years and we are looking at growing concerns about whether there is enough investment. That is partly because the sector says with a short-term spot market in electricity there is no reserve with which to fund new investment. The markets determine the short-run operating costs. The prospect of shortfall does not drive enough income to justify putting a billion pounds into a new power station. So you have a sector which claims it is not getting enough revenue really to fund new investment and we now have an instrument which is certainly giving it a significant amount of revenue. It is still not investing. Why? Partly because of uncertainty, and if you are faced with big uncertainty very often your ration choice is actually to sit there and wait, and I think that is what the power companies are doing. I think they are saying, "It is too risky to build gas because there may be regulations. We are not sure about gas prices. We may not need it yet because we can build gas plants damn quickly when we have to. It is too risky to build coal, although that is the cheapest because this beast called the ETS exists, and the problem will be the carbon price, which is enough to make us wary of making new coal investment." In Germany they tried to get a guarantee to protect it and that has now been ruled illegal. They might invest in renewables to the extent that the renewables support mechanism helps it, but basically the fundamental response of the power sector is to sit there transfixed while the number of uncertainties stare them in the face. Until we resolve that uncertainty and we resolve it in a low carbon direction and in a way which enables the sector to have enough resources to risk a few billion pounds here and there in new stations, we will continue to have problems in the power sector.

Mr Wilde: One thing I would add to that, though, is that it is not an indefinite situation. When one looks out to 2015 there is quite a looming capacity gap of around about 15 gigawatts in the best case scenario because of the retirement of coal plants and nuclear plants. So they will be investing and it is all about making sure they invest in the right things.

Q242 David Howarth: You have mentioned coal. I can guess your answer to this, but it would be good to have it on the record anyway. Can I just put to you two suggestions made to us by the Clean Coal Task Group to encourage coal to come on-stream. One is to give coal stations larger allocations in the first place to reflect their larger emissions. The second is to deal with carbon capture by allowing companies which do that to effectively sell the carbon they have captured as accredited to the market so that they would be able to get an allocation equivalent to the amount of carbon dioxide they have captured. What are your views on those two suggestions?

Professor Grubb: I think the first one, certainly if it is applied to new investment, is basically calling on the UK to have rules such as Germany tried to do. This falls into the camp of what I call one of the universal laws of policy making, which is you try and introduce an instrument to change something and the political reaction is to try and undo it so that it does not change anything.

Q243 David Howarth: That is absolutely right.

Professor Grubb: What they appear to be asking for is actually really nothing to do with the EU ETS other than to say, "We don't really believe there is a carbon problem, so we want to go on building coal power plants. So please protect us from the incentive you have just created to de-carbonise." I think that really has no credibility in a world in which we know there is a carbon problem. The idea of building new coal infrastructure which will generate carbon for many, many decades ahead is contrary not so much to the ETS but just contrary to the basics of the climate change problem. I think that is the problem with the German proposal. It is this completely two-handed situation where half the government is saying there is real problem and the other half is trying to say, "We want to pretend there isn't a problem, and re-write the ETS rules to conform with that view." I think carbon capture and storage is interesting and it is one of the topics under review as part of the ETS review, I think appropriately. It is quite clear that coal plants with carbon capture and storage will not be emitting anything like as much carbon, therefore they will not be exposed to the carbon cost. Should they still be given lots of free allowances, much higher than they are actually going to emit in order to try and deliberately subsidise? I remain rather sceptical. What I would like to see, frankly, regarding all the new entrants to the power sector, is that any new generating plant should, if it is going to get any free allowances, should get exactly the same amount as every other new power plant per kilowatt hour produced. If you can get below that average, great, you have got a surplus and you can sell it. If you are above that average, you have got to go and buy and reflect the fact that you are building a more carbon-intensive plant. That is the only rational approach in this sector.

Q244 Chairman: You mentioned options earlier on and we had some discussions with the Commission earlier in the week about optioning. I think most of those we have talked to are keen to move towards a much higher proportion of options. One of the obstacles is people's suspicions about what happens to the revenue and whether this is another stealth

tax. How is that best overcome? If we are going to recycle the revenues to something like the environmental transformation, how do we achieve the level of confidence needed that that is really going to happen?

Professor Grubb: I tend to regard that question as not really being about emissions trading per se, it is about how government uses money and the extent to which it wants to hypothecate money from one source towards particular ends. To that extent, I do not have a great deal of knowledge or insight to offer. I would make the general point that solving the climate change problem is a very big endeavour and it is going to require some government funding as well as market-based incentives. I firmly believe that and the idea that we just set a carbon price and then walk away and everything will be delivered is nonsense. I think to set a carbon price is absolutely fundamental, but there are various other things which need to be done which will require money, including technology development, including perhaps support of particular sectors in particularly exposed areas or where there are low carbon ways of, for example, making steel which have not yet come into the market. I think there are lots of valid things one could make a case for where government needs to spend money. How credible is that? How does government do it? I guess that is a question which one could ask the Carbon Trust. You could certainly ask the Treasury. The Treasury itself has announced plans for various expenditures. Would it make sense to use some auction revenues for those expenditures? Quite possibly. I have noted with interest that the announcement of the Environmental Transformation Fund was made at more or less the same time as the announcement about auctioning, but the two are not formally linked or hypothecated. I think in some European countries, and certainly in Japan, they would be much more willing to just say, "Well, that pot of money is linked to this problem and the money will be used for that, as opposed to going through general expenditures."

Q245 Dr Turner: I want to follow that point, because as it is the money produced by the sale of allowances in the market does not get invested in actual carbon reduction investment, whereas if the auctions were allowed that would be effectively tantamount to a carbon tax and a carbon tax credit system, which others (including myself) have advocated over the years, which would actually hypothecate but it would show that the money was actually going into carbon reduction technologies?

Professor Grubb: Yes. I think there is a lot to be said for that. As I say, I do believe that solving this problem will involve expenditure as well as market incentives. Given that fact, I see no fundamental objection to linking revenues from economic instruments to some of those expenditures.

Q246 Dr Turner: Of course, everybody wants to see aviation in the ETS now, except the Americans, the Japanese, the Australians and a few others. How soon do you anticipate that aviation will be included in the ETS and what impact do you think it will have on the scheme when it is?

Professor Grubb: I should have made sure I had in front of me some evidence that we submitted to the Climate Change Programme Review eighteen months ago or so. We listed four questions at the end of that evidence which I think have to be addressed. One is, if you take the kinds of prices we are looking at in the EU ETS, say 20, 30 or even more Euros, and apply that same carbon price to aviation, how much difference do you think it will make? That is the first question I would like to see an answer to. The second question was, if you look at 60% reduction and make some estimate of what you think an acceptable role of aviation emissions within the relatively small pot that is left should be, what kind of carbon prices do you think you would need to drive aviation down to those levels, and do you think the rest of the UK and European industry would bear those kinds of carbon prices? The answer is very high compared with the numbers we have been talking about. I think there is a third area surrounding the non-CO_2 emissions from aviation which probably account on aggregate for something like as much as the CO_2 again, but much more uncertain, much harder to monitor, dependent upon flight paths, flight levels, et cetera. My understanding is that the idea of including those emissions in the EU ETS accounts has been dropped, but I may be wrong. The fourth thing was simply that one legal distinction is that all the ETS emissions at present fall under the remit of Kyoto protocol and Kyoto protocol targets. International bunker fuels do not fall under the remit of Kyoto protocol targets, so what are the legal implications of trying to include in the ETS something which has no match at all across the Kyoto targets? You will gather from that that I have set down four questions I would like to see clear answers to before I am ready to join the fan club of including aviation in the EU ETS.

Q247 Dr Turner: In that case you will probably give an even less enthusiastic answer to my next question, which will be the last one, which raises the fact that our erstwhile Secretaries of State for Environment, Trade and Industry and Transport wrote to the Commission urging the inclusion of surface transport emissions in the ETS. Do you have any feelings about how this might work out in practice and what are your views on whether it should or should not be included?

Professor Grubb: I do not think that surface transport should be included in the EU ETS. It is not designed for distributed sources of that nature. The prices will make zero impact relative to current petrol prices anyway. It would vastly complicate the EU ETS system. I would love to see the reasoning.

Chairman: I think that accords with our view about this issue actually. I do not think there is much enthusiasm for doing it, but I am grateful for your confirmation in such a clear way about it. Thank you very much for coming in and I have no doubt we will see you again. This will remain a highly topic for quite a long time to come.

Tuesday 12 December 2006

Members present:

Mr Tim Yeo, in the Chair

Mr Martin Caton	David Howarth
Colin Challen	Dr Desmond Turner
Mr David Chaytor	Joan Walley

Memorandum submitted by the Department for Environment, Food and Rural Affairs

INTRODUCTION

The EU Emissions Trading Scheme (EU ETS) is a "cap and trade" scheme designed to reduced carbon dioxide (CO_2) emissions in the most cost effective way. It is one of the key policies introduced by the European Union (EU) to help meet the EU's greenhouse gas emissions reduction target under the Kyoto Protocol. The EU is required to make an 8% reduction in emissions compared to 1990 levels by the first Kyoto Protocol commitment period (2008 to 2012). Phase I of the Scheme commenced in 2005 and runs until the end of 2007, to be followed by Phase II which coincides with the first Kyoto commitment period of 2008–12. Under the EU's Burden Sharing agreement the UK is required to make a 12.5% cut in greenhouse gas emissions by 2012.

The Energy Review reiterated that the Scheme is the cornerstone of the Government's policy framework to tackle climate change. The UK plans for Phase I are set to deliver carbon dioxide savings of around 65MtCO_2[1] (21.7MtCO_2 per year), while the recently published National Allocation Plan (NAP) for Phase II expects to deliver further savings of 29.3MtCO_2 per annum below business as usual projections. These plans, along with the other measures in the Climate Change Programme, are expected to deliver carbon dioxide savings of 16.2% below 1990 levels, putting us on a path towards the Government's 20% carbon dioxide reduction target.

The Scheme is cost-effective for the economy because emissions reductions are likely to take place at the point of least cost. Most emissions abatement will be carried out by operators with the lowest abatement costs, since these operators will be able to bring the cheapest allowances to the market. Thus emissions trading keeps down the overall cost to the economy of tackling climate change relative to less flexible instruments.

This type of scheme is also ideally suited to regulating greenhouse gas emissions, since the nature of greenhouse gases means that emissions make the same contribution to the greenhouse effect wherever they are made. The corollary is that emissions savings have the same environmental benefit wherever savings are made.

THE COMMITTEE'S QUESTIONS:

1. *What are the key lessons to learn from Phase I of the Scheme?*

The European Commission have always referred to Phase I as a learning by doing phase, recognising that emissions trading had not been tried before on this scale, and so there were likely to be lessons to learn. The first significant and positive lesson of Phase I is that it has demonstrated that it is possible to take multilateral action to tackle climate change. The EU ETS has been developed and implemented against a very tight timetable. The Emissions Trading Directive[2] was finalised by the Council and the European Parliament in October 2003 and gave Member States just two months to transpose the Directive into national law. Member States then had just twelve months to prepare National Allocation Plans and to implement the Scheme only 12 months later. Although not all, Member States were able to meet this challenging timetable, the Scheme was operational across the majority of the EU by early 2005, demonstrating that it is possible to take swift and decisive action to implement measures to combat climate change.

The results of the first year have reinforced this positive message; these show that the mechanism is viable and that the infrastructure behind the Scheme is operating as expected. Across Europe operators monitored, and reported their 2005 verified emissions, and surrendered allowances. In the UK more than 99% of installations met the compliance deadlines. Whilst the first year of the Scheme has highlighted areas for improvement, it has also shown that there is a solid base to build on for the future.The operation of the Scheme has, however, highlighted the following key areas that should be addressed in the future:

[1] Million tonnes of carbon dioxide.

[2] Directive 2003/87/EC of the European Parliament and of the Council establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC.

Consistent coverage of emissions across Europe

Differential interpretation of the Directive by Member States may have allowed anomalies in the coverage of emissions or competitive distortions to arise in Phase I. Therefore, a key UK priority for Phase II was to work towards more consistent coverage of emissions sources across the EU 25 in order to reduce the potential for competitive distortions. The Commission produced additional guidance for Member States approaches for Phase II. This set out the expected level of ambition and scope of the Scheme during the next phase. The guidance outlines a number of new sources of carbon dioxide[3] that should be covered in Phase II as well as better defining activities already covered by the Scheme. The UK has also developed, in conjunction with industry and other Member States, consistent definitions of the expansion activities to help ensure consistent coverage of these new activities. The Commission has indicated that it will use these definitions when assessing Member States' Phase II NAPs.

Scarcity of allowances

Scarcity of emissions allowances is vital to the Scheme, if it is to deliver real emissions reductions and help to deliver the EU's Kyoto commitments. The results of year 1 showed that emissions across Europe were less than had been anticipated when Member States set their emissions cap and allocated allowances. Industry should have to take some action to achieve surpluses that can be sold, they should not receive more allowances than they need in the first place. However, it is evident from 2005 emissions results that more allowances were available than were required for compliance with the Scheme, hence deflating the value of allowances, and, consequently, diminishing the financial incentive to reduce emissions over buying allowances. Though it is too early to draw firm conclusions with just one year's data, the results highlight that it is crucial that realistic but tough caps are set consistently across the EU, for future phases. Since scarcity drives the carbon price this should incentivise industry to deliver real emissions reductions.

The Commission has recognised this and in a recent article in the Financial Times Commissioner Dimas stated: "The Commission will use all political and legal tools at its disposal to ensure that national plans are fully consistent with the Kyoto commitments and the verified data so that there is scarcity on the market and a level playing field for all participating companies". The UK has called for Phase II caps to be set at a level that ensures an appropriate contribution to delivering the EU's Kyoto target, and the Commission has stated its intention to use actual verified emissions from 2005 as a starting point for assessing Member States NAPs.

Long Term Certainty

The time horizon over which the industries covered by the EU ETS make investment decisions (such as whether to invest in low carbon electricity generation) is, in many cases, much longer than the current phases of the Scheme. As such this makes it difficult to take the carbon cost established by EU ETS fully into account for those decisions. Longer term certainty will make it easier for the carbon cost to be fully factored in to long term investment decisions, which will maximise the potential of the Scheme to stimulate industry investment in low carbon technologies. The Government considers that the European Commission's review of the Scheme,[4] which is currently underway, is the best opportunity we have to map out the necessary long term policy framework that provides clear and convincing signals about the scheme, and about the likely level of future ambition for the scheme.

In addition to these lessons, the operation of the Scheme to date has highlighted a number of other issues for Member States and the Commission to be aware of. Some of these issues can be and are being addressed now. For example the handling of market sensitive information. The release of some Member State's year 1 results prior to the Commission publishing the data on 15 May 2006, caused unexpected volatility in the carbon market, therefore the Commission has asked that Member States give the market two days advance warning of any information releases.

Other lessons, for example the impact of the Scheme on smaller emitters, however, need to be addressed through legislative changes and so are being considered by the Commission's Review of the EU ETS Directive. Smaller emitters make up the majority of installations covered by the Scheme but account for only a small proportion of the emissions. In 2005 approximately 60% of the installations in the UK emitted less than 5% of the UK's total emissions covered by the EU ETS. This raises questions about whether the associated regulatory burden is appropriate for these installations. The UK has scaled administrative charges and established tiered monitoring and reporting requirements to reduce the regulatory burden on these installations, and has suggested means to exclude some of the smallest emitters from Phase II. More wholesale means of addressing the burden or considering whether smaller emitters should be captured by the Scheme are only available through legislative changes and so must be addressed through the Commission's Review.

[3] These are: crackers, carbon black, flaring (including offshore), furnaces (including rock wool) and integrated steelworks.

[4] Article 30 of the ETS Directive requires the European Commission to review the functioning and design of the greenhouse gas emissions trading scheme for the post-2012 period in respect of a number of specific issues.

To date signs indicate that the EU ETS has a promising future. The regulatory mechanisms are functioning as envisaged and so provide an excellent foundation to build on; the development of Phase II allows many of the immediate issues to be addressed, and the review process is an ideal opportunity to take care of longer term matters.

2. *How likely is it that UK firms would successfully reduce emissions by at least 7MtC by 2012, in line with the proposed Phase II NAP?*

The Phase II NAP allocates at 8 MtC (29.3$MtCO_2$) per annum, below the projected emissions of the traded sector (often called 'business as usual emissions'). Installations in the EU ETS have the flexibility to choose how to comply with the Scheme. This means that if an installation expects its emissions to exceed its allocation of free allowances they are able to either:

— Reduce their own emissions.

— Buy additional emissions allowances from the carbon market (made available through other installations selling surplus allowances).

— Invest in emission reduction credits via Joint Implementation or Clean Development Mechanism projects.

The Regulatory Impact Assessment accompanying the UK's Phase II National Allocation Plan, (published on 21 August), estimated that 3MtC (11$MtCO_2$) of cost effective carbon abatement could be achieved annually in the UK with an allowance price of €20. However, because UK companies have the flexibility to buy emissions allowances when this is more cost-effective than reducing their own emissions some purchase of allowances can be expected by UK firms to meet the cap set. This flexibility ensures that savings delivered by UK industry are delivered at a lower cost than if companies were only allowed to follow the first route. The effort level of 8MtC also helps takes the UK closer to the 2010 goal and provides for the scarcity of allowances necessary for the market to function properly.

3. *What have been the effects of the method chosen for allocating allowances in Phase I?*

The Directive states that at least 95% of Phase I allowances must be allocated for free. The consequence of this is that operators who are most able to pass through the costs of the EU ETS to their customers, such as the power generators, were potentially able to make a windfall profit by passing through the costs of emissions and by selling any surplus allowances. We have taken measures in our Phase II allocation methodology to reduce the extent of windfall profits for the power generators. We intend to auction 7% of allowances in Phase II, and we are proposing that the auctioned allowances come from the power generators sector allocation. The Government has also stated that our long term goal is to move toward full auctioning. Auctioning is the simplest and most transparent allocation methodology, and requires operators to take full account of the cost of carbon in their investment decisions.

A UK priority for the Commission's review of the Scheme is to consider the way in which the total number of allowances across Europe, in each Phase, is set. By ensuring harmonisation occurs, where feasible, there would be less risk of competitive distortions between Member States due to different allocation and cap setting methodologies.

The UK's Phase I allocation methodology was a two stage methodology; allowances were first distributed to sectors, creating sector caps, and then allowances were distributed between installations in each sector. The methodology was clear, transparent and relied on general rules rather than case-specific considerations. The methodology was not intended to give every installation an allocation in line with projected need—we expected that some installations would receive more and some less. However, allocation differences between installations may have been exaggerated by different elements of the methodology.

For example, at the sector level the large number of sectors may have affected some of the sector caps, and therefore the amount of allowances available for installations in those sectors. In Phase I there are 51 sectors, which were modelled to align with sectors in the UK's Updated Energy Projections (UEP) and those of the Climate Change programme policies, principally Climate Change Agreements. The rationale for this was to ensure that sector projections took full account of existing policy commitments, and therefore provided each sector with an allocation based on need, without expecting undue emissions reductions because of overlapping policies. The different sectors allowed for the recognition of differences in output and emissions growth rates of different types of industry. However, the number of sectors may have over complicated the calculation of emissions projections, affecting particular sector caps.

At the level of installation allocations the benchmarking process appears to have exaggerated difference in allocations. Benchmark allocations were calculated before the allocations to other installations in each sector, however, the benchmark calculations appear to have overestimated emissions. Consequently these installations may have received a disproportionate share of their sector allowances. The impact of this is likely to be proportionately greater in the smaller sectors.

These considerations were taken into account in the development of the allocation methodology for the UK's Phase II National Allocation Plan (NAP). We have reduced the number of sectors to 18, resulting in broader more transparent sectors. This dilutes the potential impact of individual installations' allocations,

such as those of benchmarked installations, on others in the sector, as well as reducing the complexity of the sectoral emissions projections. The benchmarks have also been modified to ensure that benchmarked allocations are more representative of projected need.

4. *Has the Government identified the correct proportion of allowances to be auctioned in Phase II? Should these be drawn solely from the power sector's allocation? What will the effect of this auctioning be on industry and the price of carbon?*

The EU ETS Directive allows for up to 10% of allowances to be auctioned in Phase II and the Commission strongly encouraged Member States to have some level of auctioning. The Government's long term goal is the full auctioning of allowances so the cost of carbon will be fully taken into account when making investment decisions. Government had made clear its intention to take into account in the phase II UK NAP the rejected revised Phase I NAP figures; hence the decision not to auction the maximum 10% of allowances.

The auctioned allowances will come from the Large Electricity Producers sector as they are more protected from international competition and there is more potential for abatement in this sector than in others. By setting the limit at 7% rather than 10%, the 20 million allowances which the UK has not allocated in Phase I have been taken into account. Electricity generators can pass the price of carbon allowances through to electricity prices, even though they receive the majority of allowances for free—this is a natural pricing response from the industry and one that is necessary to ensure electricity prices reflect the cost of carbon. This practice results in an increase in profits ('windfall' profits) equivalent to the market value of free allocation. Auctioning allowances that would otherwise have been allocated for free reduces the potential for windfall profits but does not have any additional impact on electricity prices.

The price of carbon in the EU market is determined by the interaction of supply and demand. Therefore, whether allowances are allocated for free or released into the market via an auction the overall level of supply will be the same. Therefore we expect there will be no impact on allowance prices. The Government is carefully considering the design of the auction process, in consultation with stakeholders, to minimise the risk of short-term price volatility in the market immediately preceding and during an auction.

5. *What have been the effects of Phase I so far on the competitiveness of (1) business in the UK, and (2) business across the EU?*

EU ETS has only existed for a short period and its impacts on competitiveness are still being explored. Consequently, there are a limited number of firm conclusions that can be drawn at this time.

In the short to medium term, competitiveness, in the UK and across Europe, is only affected to the extent that production decisions of companies are changed by the EU ETS. This depends on the impact of allowance costs on companies' decisions, rather than the initial allowance allocation. Allowance allocation may affect a firm's profitability and, over the longer term, investment decisions.[6]

Research suggests that the indirect effect to industry of higher power prices is more relevant in terms of a possible threat to competitiveness than the direct effect of regulation.[7] The extent of the pass-through of carbon costs into electricity prices is, therefore, a potentially significant factor. The exact EU ETS cost depends on the mix of fuels used in generation but DTI estimate that for every increase of €1 in the carbon price, the *wholesale* price of electricity in the UK will increase by up to £0.45 per megawatt-hour. It should also be noted that other factors have caused electricity prices to rise recently, for example increases in the gas price. Therefore, isolating the exact impact of EU ETS is very difficult. Analysis suggests that the wholesale electricity price rose 72% between 2004 and 2005. Of this 72% rise, a 25% increase is estimated to reflect carbon costs, and the rest due to rising fuel costs.

Some analysis included in a recent report by the Carbon Trust (*Allocation and Competitiveness in the EU Emissions Trading Scheme: Options for Phase II and Beyond*, June 2006) concluded that all EU ETS sectors have the potential to profit from the EU ETS (although cement and steel could risk losing a small percentage of market share).

It is believed that to date, any rise due to carbon in the *retail* price, which is what most electricity users actually pay, has been less. DTI's analysis suggests that the carbon cost is not being fully passed through so some electricity suppliers appear to be subsidising the carbon cost for their customers. However, by the end of Phase I a greater level of pass-through into retail prices is expected to occur, and in future the rise in the retail price is expected eventually to be the same as the rise that has already occurred to the wholesale price, due to the EU ETS.

The levels of carbon cost pass-through to energy prices and the ultimate price rises attributable to the EU ETS may differ across Europe. This is because of the effects of differing levels of energy market liberalisation and the different fuel mixes of energy generation between the Member States. Competition between

[5] Note that the Phase II Large Electricity Producer sector is the equivalent sector to the Phase I Electricity Supply Industry. The change in terminology follows comments from industry.

[6] A literature review on potential competitiveness impacts of the EU ETS, conducted by Frontier Economics, is available at: http://www.defra.gov.uk/environment/climatechange/trading/eu/phase2/research.htm

[7] Ibid.

electricity suppliers in more liberal markets is likely to limit cost pass through, whereas cost pass through is likely to be higher in Member States where higher emitting fuels, such as coal, make up a larger proportion of the fuel mix. Regardless of differing levels of pass-through fossil fuel price increases have been a more significant factor in increasing electricity prices over the past year than before the introduction of the EU ETS, as already noted above. **Table 1** below shows the relative costs of electricity (for medium-sized users) as at March 2006 in key member states.

Table 1

RELATIVE COSTS OF ELECTRICITY FOR MEDIUM SIZED USERS (MARCH 2006)

	Industrial users March 2006 Pence per KWH (Inc Taxes)	*Domestic Users March 2006 Pence per KWH (Inc Taxes)*
UK	5.21	8.16
ITALY	7.99	14.45
SPAIN	3.71	7.85
FRANCE	3.8	8.33
GERMANY	5.97	12.65
N/LANDS	4.87	15.32
EU 15 MEDIAN	5.04	9.68

A rare combination of factors is required for the EU ETS to have a significantly adverse impact on competitiveness. Research suggests such an impact is only likely to occur where an electricity or carbon intensive production process faces significant competition from firms or plants based outside the EU.[8] **Table 2** below highlights those sectors which are most affected by increased energy costs in terms of their energy intensity and market structure.

There are clearly a few sectors that will be negatively affected, for example, aluminium. There are others that are clearly net beneficiaries, at least in terms of impact on profits, for example, electricity generation. However EU ETS is just one of many factors affecting firms' competitiveness[9] and is unlikely to be a significant one, at least until there is greater certainty about its status over a longer period than Phase II. But the Government did recognise the differing potential impact of the EU ETS on differing sectors competitiveness when developing the allocation methodologies for both Phase I and Phase II. All sectors were allocated sufficient allowances to meet expected need, except for the power generation sector which is insulated from international competition, and has relatively large scope for low cost emissions abatement.

Table 2

ENERGY INTENSITY AND COMPETITIVE POSITION OF UK INDUSTRIES

Increasing ability to pass through costs

	Competition Structure		
High Energy Intensity	Facing stronger competition from non-Kyoto (US, China, India) markets relative to other sectors	Competing in mainly EU markets relative to other sectors	Competing in mainly UK markets relative to other sectors
	Aluminium	Lime, plaster	Cement
	Pulp & paper	Iron & Steel	Bricks & construction products
	Chemicals	Hollow and Flat Glass	Primary rubber
	Man-made Fibres	Primary plastic	
	Mining of clays and kaolin		
Low Energy Intensity	Facing stronger competition from non-Kyoto (US, China, India) markets relative to other sectors	Competing in mainly EU markets relative to other sectors	Competing in mainly UK markets relative to other sectors
	Textiles, Leather & Clothing	Printing and publishing	Energy Supply Industry
	Ceramics	Wood & Wood Products	Food, Beverages & Tobacco
	Other Non-Metallic minerals	Other Glass	Other Oil & Gas
	Engineering and Vehicles	Rubber & Plastics	
	Non -Ferrous metals		
	Refining of petroleum products		
	Other Chemicals		
	Offshore oil & gas		

[8] A further report by Frontier Economics, commissioned by the DTI, uses case studies to assess the likely impact of Phase II of EU ETS on UK firm competitiveness through the estimation of cost and response functions. http://www.dti.gov.uk/files/file33248.pdf?pubpdfdload=06%2F1830

[9] Other factors might include, for example, local wages or requirements for planning permission.

6. *What are the key issues for Phase II in terms of ensuring that emissions reductions from EU states are not cancelled out by the transferring of industry to developing economies?*

Economic theory predicts that industry will transfer out of areas with environmental regulations to areas with fewer constraints on business operations when the cost of relocating is less than the cost of meeting the environmental regulations. As such the EU's climate change policies need to avoid tipping the balance in which the transfer of industry becomes more cost-effective than action to reducing emissions. The key issue then is one of balancing the relative competitive disadvantage of imposing emissions restrictions against the cost to industry of relocating to areas without restrictions. Therefore any mechanisms which reduce the relative cost of reducing emissions in the EU (or increase the costs of operation outside the EU) should reduce the risk of "carbon leakage."

The trading mechanism of the EU ETS itself reduces this risk, compared to less flexible alternatives, since it ensures that emissions reductions are made at the point of least cost and are, therefore, the most cost-effective for the economy. Increasing the flexibility of the scheme may further reduce the cost of emissions savings in the EU, for example by expanding the scope of the Scheme, or by allowing Kyoto project credits to be used for compliance in the Scheme. Expanding the Scheme could bring further cost-effective abatement opportunities into the Scheme, whilst project credits provide operators with more options for compliance, giving them greater ability to choose the most cost-effective way of meeting their obligations under the EU ETS. In Phase II the Scheme will be expanded to cover further sources of carbon dioxide emissions, and will continue to allow operators to use Kyoto project credits under the terms of the European Commission's "Linking Directive," [2004/101/EC]

The risk of carbon leakage can also be mitigated by considering competitiveness impacts when allocating allowances. For example, the UK allocated allowances on the basis of projected business as usual need for Phase I, as mentioned in response to earlier questions, except to the Electricity Supply Industry which was asked to deliver the expected emissions savings. This is because the industry in the UK is largely insulated from international competition.

7. *How well are the EU ETS and the Clean Development Mechanism working together? What needs to be done to better integrate these markets? Is the CDM funding the right projects?*

The Linking Directive, an amendment to the ETS Directive, has provided the framework enabling use of Clean Development Mechanism (CDM) credits in the EU ETS. EU ETS operators and Governments are already taking advantage of this opportunity. There is an estimated demand of 520 Mt CO_2e[10] from EU Governments per annum with an estimated €2.7 billion worth of funds set side for purchases. There is also an estimated €1 billion of investment of private funds in London alone.

The UN's International Transaction Log (ITL) needs to be delivered and linked to the European Community's ITL (CITL) (and thereby national registries) for CDM credits to be able to be used for compliance in the EU ETS. However, we expect this to happen in 2007, in time for use of credits before the end of Phase I.

The Clean Development Mechanism (CDM) is a market mechanism helping deliver emission reductions at least cost and as such it is hard to determine the spread of project types. However, as you might expect, there is already a range of different project types in different countries. The CDM Executive Board oversees a rigorous process to ensure that projects deliver real emission reductions, which comply with the host country's assessment of contributing to its sustainable development.

The EU ETS Directive requires Member States' use of the CDM to be consistent with the principle of "supplementarity", whereby domestic action must constitute a significant element of the effort made to reduce greenhouse gases. In the second phase Government has set an 8% limit on the use of project credits[11] per installation; this represents around 66% of the difference between business as usual emissions and the total cap (ie the level of effort in the UK), thereby balancing the need for domestic action with the benefits of investing in overseas projects.

8. *How should aviation be included within the ETS? What are the latest indications of when it will be included?*

The Government has worked hard to secure EU endorsement of the inclusion of aviation in the EU ETS, and continues to press for rapid progress. There are a number of issues in the existing Scheme that need to be adapted in order to include aviation, these include:

— **Allocation Methodology and Monitoring, Reporting and Verification regime**—As with allocations to installations already covered by the EU ETS the allocation methodology will have to be fair, equitable and provide incentives for reductions (including credit for early action where appropriate). We also need to work with the industry to develop appropriate reporting and verification methodologies, and definitions of new business or closure that are suitable for aviation.

[10] Carbon dioxide equivalent.

[11] Project credits refer to the credits from both CDM and Joint Implementation (JI) projects under the Kyoto Protocol.

— **Cap setting**—Currently there are no agreed ways of dividing responsibility for emissions from international aviation between Member States. For example responsibility could lie with the Member State from which the flight departed or the State travelled to, or with the States over which emissions were released geographically. Given these political and technical challenges of allocating emissions from international aviation to Member States, national cap setting as already used in the EU ETS does not seem viable so there are few practical options beyond an EU wide harmonised cap. Though as with national Member States' caps, the aviation cap must be stringent and scientifically robust, but must not create competitive distortions.

— Since international aviation is not included in national inventories for the Kyoto Protocol targets (although the UK records international aviation emissions from the UK as a memo item under bunker fuels in it's national inventory), the link between the aviation sector and the wider EU Emissions Trading Scheme will need to be designed to ensure that the wider EU ETS continues to demonstrate compliance with Kyoto obligations. This is likely to involve a requirement that aviation as a sector can only be a net buyer of allowances.

— **Trading entity**—In the existing scheme the trading entities are the installations with "stationary technical units" that are used for industrial activities covered by the Scheme. For aviation airlines seem to be the most obvious equivalent entity that could be required to surrender allowances.

Further to these considerations the inclusion of aviation presents issues specific to aviation, and aviation emissions. These include:

— **The coverage of non-CO_2** climate impacts—The climate change impact of aviation is greater than its carbon dioxide emissions. The Intergovernmental Panel on Climate Change have estimated the total climate change impact of aviation to be two to four times that of its carbon dioxide emissions alone. Government recognises the technical challenges and scientific uncertainty surrounding the inclusion of non-CO_2 effects in emissions trading, and the need for further research to resolve these issue. These concerns are feeding into the development of our final view on how to address the non-CO_2 impacts of aviation, for which we are considering the pros and cons of a range of options to assess what can be feasibly be delivered and when.

— **The geographical scope**—CE Delft conducted a feasibility study for the European Commission which concluded that there were no legal obstacles to the introduction of international aviation to the EU ETS, including the flights of non-EU carriers and flights departing the EU. Including aviation in the Scheme using an all-flights departing model would capture around 80% of total emissions from EU flights,[12] whilst an intra-EU flight model would capture 32%. The Government's objective is for the scheme to be as environmentally effective as possible. Given that it captures more emissions, the all departing flights approach would therefore fulfil this objective.

— **Interaction with Kyoto** –International aviation is outside of the remit of the Kyoto Protocol, therefore there are no Kyoto backed allowances for aviation emissions. However, as international aviation is likely to be net purchaser of allowances some form of linked scheme may be a workable option; where aviation participants can only sell as many allowances to the main scheme as they buy in.

The Government is still assessing the advantages and disadvantages of different methods to resolve these issues. The European Parliament recently adopted a report which proposed a separate dedicated emissions trading scheme for aviation since international aviation is not subject to Kyoto commitments. However, we continue to believe that the inclusion of aviation in the EU ETS is likely to be the best approach, since it would take advantage of the infrastructure already in place for the EU ETS, and help to create a larger and more liquid market for allowances. A separate scheme risks taking longer to set up and being less effective when it is finally in place. Since aviation is likely to be a net buyer of credits due to the minimal abatement options within the industry, it will effectively finance reductions that can be produced more cheaply in other sectors.

The Government's stated aim is for aviation to join the EU ETS from 2008 or as soon as possible thereafter. The Commission aims to bring forward a legislative proposal by the end of 2006; this may make it difficult to complete all the stages of the EU legislative process in time for introduction in 2008. However, the Government will continue to press for early inclusion of aviation in emissions trading.

9. *The Environment Secretary has said: "we will support the Commission in its efforts to enforce tough caps". What exactly should the Government be doing to influence this?*

The UK has supported the Commission's statements about their expectations for Member States for Phase II by calling for caps to be set at a level which supports market scarcity and their Kyoto targets. The UK has worked with counterparts in other Member States, at the highest level, calling on caps to be set in line with the requirements of the Directive, and to ensure real scarcity in the market. It is inevitable that there will be some Member States who do not set sufficiently tight caps. The UK will therefore support the

[12] Total EU emissions are defined as emissions from flights passing to or from EU airports plus emissions from flights passing through EU airspace.

Commission in their consideration and rejection of such caps. It is important not just for the environmental objectives of the scheme, but to ensure that firms and investors receive clear and consistent signals about the long-term framework for tackling climate change, and are able to make long-term investment decisions accordingly.

10. *How well integrated are the ETS and other EU climate change policies?*

The European Climate Change Programme's (ECCP) initial work was to develop further policies and measures focused on the energy, transport and industry sectors. In October 2001, the European Commission brought forward a package of three broad measures to tackle climate change. A key element was the proposed Directive on Greenhouse Gas Emissions Trading—which led to the EU ETS scheme we now have in place. In 2002/3 the ECCP entered its second phase with the aim of facilitating and supporting the actual implementation of the priorities identified in the first phase.
http://europa.eu.int/cgi-bin/eur-lex/udl.pl?REQUEST=Seek-Deliver&LANGUAGE=en&SERVICE=eurlex&COLLECTION=com&DOCID=503PC0492&FORMAT=pdf
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The legislative outcomes from this phase included the directive on emissions trading.

In 2005, the Commission announced that it was reviewing the progress made by the ECCP. Whilst the review is continuing to focus on the achievement of the EU's Kyoto obligations, there is much more emphasis on post-2012 obligations. Some work to date includes the Commission's recent public consultation seeking views on measures to further improve cars' fuel efficiency and reduce their CO_2 emissions to help meet the EU's aim of reaching—by 2010 at the latest—an average CO_2 emission figure of 120 g/km for all new passenger cars marketed in the Union.

The review has three objectives. The first is to consider the effectiveness of climate change related EU-wide polices and measures (called Common and Co-ordinated Measures (CCMs) at EU level) introduced since 2000 and to consider what, if any, future action should be taken in the various sectors. This work is covered by Working Group 1 (WG1) under which five sectoral work strands have been set up covering Transport (general), Agriculture and Forestry, Non-CO_2 emissions, Energy Supply and Energy Demand. The second objective is to consider what additional CCMs the EU should consider putting in place in new areas. Working groups have been set up covering aviation, carbon capture and storage, and transport (covering integrated approach to reducing CO_2 emissions from light-duty vehicles). The third objective is to consider how the EU needs to adapt to climate change and 10 working groups have been set up to look at different aspects. This is the first time that the EU has seriously considered adaptation at any level.

The EU ETS is the largest greenhouse gas emissions trading scheme in the world, and is perhaps the most significant contribution of the ECCP. It is an important component of the UK's work to move towards a low carbon economy and is the most significant measure in the UK's Climate Change Programme. The reason it does not form a part of the ECCP review is because the scheme is already undergoing a separate review, as required by the EU ETS Directive. However, the ECCP review is considering additional measures in relation to aviation, as noted above, and set up a stakeholder working group to develop recommendations on this.

11. *What work needs to be done now to help design a third phase of the EU ETS? How can the experience of the EU ETS be used to help the design of a post-2012 Kyoto mechanism?*

The EU ETS has no sunset clause, the existing legislation ensures that the EU ETS will continue to operate post-2012 and its key future role in delivering emissions reductions has been repeatedly confirmed in European Council Conclusions. The UK Government has clearly stated its long term commitment to the EU ETS in the *Energy Review 2006* recognising its central place in the UK's emissions reduction policy framework and its potential to form the basis of a long term global carbon market.

The objective for post-2012 negotiations on the EU ETS, as set out in the *Energy Review*, is to strengthen and reinforce the trading schemes in order to provide firms with the long term certainty that they need to incentivise early investment in low carbon technologies.

Specific areas are highlighted in the Energy Review in support of this strengthening objective. They are listed below.

- Providing greater clarity on when and how limits (caps) on emissions will be decided in future.
- Simplifying and harmonising the Scheme, particularly the way that allowances are allocated.
- Ensuring the market functions more efficiently.
- Considering whether more sectors- and more greenhouse gases- should be included.

— Thinking globally to develop a more liquid and efficient market.

As noted above, the Government believes the Commission's Review of the EU ETS is the best opportunity we have to map out the necessary long term policy framework that provides clear and convincing signals about the future of the Scheme post-2012. The Commission is due to publish a report shortly that sets out the key areas to be considered as part of the Review and this should give an indication of the policy areas that they will be examining most closely.

We will continue to engage at all levels with the Commission and other Member States, industry and other UK stakeholders, to ensure that the policy in the areas highlighted by the Energy Review is progressed positively.

The UK is committed to working with international partners to deliver a strengthened international framework for the global carbon market through agreement at UN level. Maintaining markets for project credits beyond 2012, as well as linking the EU ETS to other carbon markets as they are implemented, will be crucial to encouraging market investment and confidence, and fostering the development of an efficient global carbon market. Thus the true potential for emissions trading to achieve global emissions reductions can only be delivered through the continued international extension of the carbon market outside Europe. With this in mind the key use of the EU ETS in designing a post 2012 Kyoto mechanism is that it demonstrates that multilateral action on this scale is possible and at minimal cost to the economy.

October 2006

Witnesses: **Ian Pearson,** a Member of the House, Minister for Climate Change and the Environment, Department for Environment, Food and Rural Affairs, and **Mr Niall Mackenzie,** Head of Unit, EU Emissions Trading Scheme, gave evidence.

Q248 Chairman: Welcome, thank you for coming in again. As you know, we want to talk about the EU ETS which is a highly topical subject. Some of us have just been in Brussels discussing the progress they are making towards Phase II and Phase III with Commission officials. Most people regarded Phase I as essentially a learning process. Would you like to say what lessons you think can be drawn from it?
Ian Pearson: The key lessons I would want to draw from Phase I, and doing so after only one year of the scheme, it clearly demonstrates that emissions trading is a success. It is a viable way of reducing CO_2 emissions and there is a great deal of logic in using market-place mechanisms to achieve environmental objectives. Those are the headline points. Clearly there are some detailed points about the operation of a trading scheme but in terms of the overall message that trading can work and can be effective in terms of reducing CO_2 emissions is a very valuable lesson that has already been learnt from the EU ETS.

Q249 Chairman: I would certainly agree that Phase I has demonstrated the viability of the scheme and that there is a framework which is now operating and adequate checks are carried out, but it is difficult to say that it has been a success unless it has actually started to cut emissions. Given the over-allocation of emissions at the outset, can you really say that there has been any reduction in emissions as a result of the scheme being in operation?
Ian Pearson: It is still early days with regard to the overall scheme. There has been some research done already by the Massachusetts Institute of Technology which indicates that there have been CO_2 reductions already as part of the scheme. I think you are right to point out that there were over-allocation of allowances by a number of Member States during this experimental phase of the scheme and that is why, firstly, I am delighted at the Commission's approach to setting the Phase II NAPs. This has been a learning experience. It is, I believe, delivering carbon savings already but there is no doubt that as the Capital Trade Scheme gets tightened up then it will produce even more positive effects in the future which is what we clearly need to see.

Q250 Chairman: We will come on to Phase II in a moment. On Phase I, the first three years, are you aware of any individual companies or plants which have cut their emissions as a result of being inside the scheme?
Ian Pearson: Yes, certainly there will be a number of companies within the United Kingdom and in other countries that have reduced their carbon emissions directly as a result of the scheme and the incentives that it provides. If I can quote the study that I referred to from the Massachusetts Institute of Technology, it suggests that "emissions reductions across the EU resulting from implementation of the ETS in 2005 could be somewhere in the region of 50 million tonnes of carbon dioxide to 200 million tonnes of carbon dioxide". This is just one study, and it is still early days in the operation of the scheme, but I think that it already demonstrates that it is having an effect. Certainly from a Government perspective we believe that the EU ETS can have a bigger, more profound effect in the future as we tighten up the NAPs in Phase II.

Q251 Chairman: I do not doubt that. It would be helpful for us if your officials at some stage could identify those businesses, if possible, and even if they did not want their names to be disclosed publicly it would be helpful for us to know that there are some who genuinely feel that they have made different decisions as a result of the operation of Phase I rather than just in anticipation of Phase II.
Ian Pearson: Yes.

Chairman: I would like to welcome some Canadian guests we have in the Committee today: Commissioner Johanne Gelinas and her Principal, Neil Maxwell, and Senators Tardiff and Ruth.

Q252 Mr Caton: Moving on to Phase II, a couple of weeks ago, Minister, as you know the Commission announced its decisions on the first 10 National Allocation Plans. What is your reaction to those decisions, not just about the UK's NAP decisions, but the other nine?
Ian Pearson: I very much welcome the decisions taken by the Commission. The Commission set out in a very clear and transparent way the principles by which they were judging the Phase II NAPs. I would like to think that the UK and our approach in setting our own NAP and getting it in early to the Commission influenced their thinking and maybe facilitated them in taking a robust approach to Phase II, but certainly wanting to allocate on the basis of 10% below business as usual is very much to be welcomed. It will, I believe, if applied consistently across all the other EU Member States, mean that Phase II will be a significant improvement on Phase I in terms of the CO_2 reductions that will be seen as a result of it.

Q253 Mr Caton: You are quite right, we made an early submission. France made a very late withdrawal. Why do you think that was?
Ian Pearson: That is a matter for France. The key thing here is that we have an EU ETS that does deliver carbon dioxide reductions that are fair across all Member States and sectors in terms of the effort that is likely to be required and does ensure that Member States are on course to meet their Kyoto commitments. That is one of the key facets of Phase II of the Scheme.

Q254 Mr Caton: You must have a pretty good idea now as to how the Commission will treat the remaining NAPs and what the overall reduction in the aggregate cap for Phase II will be. What do you think will be the average carbon price in Phase II?
Ian Pearson: I think it is very difficult to assess what the average carbon price would be over a lengthy time period. It would be wrong for me to speculate as a government minister on what an average carbon price should be. What I would say is that I think the tough approach that the Commission is adopting and the clear principles that it has enunciated will mean that the price of carbon will be higher than it has been typically under Phase I of the scheme. We do need to ensure that there is a long term price of carbon. One of the things that we are all agreed on is that we do need to send clear signals to industry that the EU ETS is here to stay, it has a long lifetime. It is not a question of whether there will be a scheme in place in 2012; it is more a matter of what exact type of scheme there will be and that is what the review is about. We need to ensure that there is clarity in everybody's minds that what we are talking about here is the emergence of a global carbon market and that the EU ETS is actually at the centre of establishing the global price of carbon that is going to develop into the future as hopefully the EU will be able to link to other schemes in due course.

Q255 Mr Caton: In Phase II if UK companies exceed their allocations and buy allowances from the market will they actually be funding genuine carbon abatement elsewhere, not just buying hot air?
Ian Pearson: Yes, they will be. Buying allowances in the market, whether it be EU allowances or whether it be through using project credits under the clean development mechanism, these will be allowances that are built on Assigned Amount Units. It is not a matter of buying hot air. I can understand why, with Canadians in the room, you might want to raise the question.

Q256 Mr Caton: While the UK's NAP was the only one to be accepted and not reduced, there were criticisms from the Commission. In particular, it suggested that in the way the UK was proposing to give out free allocations it might fall foul of state aid rules. What is your response to that?
Ian Pearson: The only key criticism that I am aware of was the fact that we did not include Gibraltar.
Mr Mackenzie: The text on state aid and the UK's position would appear to be fairly common language which they have used in all Member State decisions effectively saying if you do certain things, ie over-allocate, that could amount to state aid and the reference you mention in our decision related to the combined heat and power changes we have notified to the Commission. All they are doing is putting a marker that if we do not agree with what you have done that could be a state aid if you have over-allocated. When they see the detail that we will submit with the final NAP for Phase II before the end of the year they will judge what we have done and decide whether they think it is an unfair state aid or not; we are confident that it is not. We have worked very closely with our DTI colleagues to make sure that we are not going to fall foul of any state aid rules.
Ian Pearson: I have looked very closely on a sector by sector basis at the NAPs and the allocation methodology and the issue of the new entrants reserve and I am confident that the approach we have adopted is a fair yet robust one.

Q257 Chairman: Could I pursue the point about the reductions for a moment. In Phase II it will be possible to satisfy the requirements by buying CDM credits. Have you got a judgment about how the reductions will be achieved? Will they be primarily through changes inside EU Member States, or will they be met primarily from the purchase by businesses that are covered by the Scheme in the EU buying credits elsewhere?
Ian Pearson: One of the key features of a market-place mechanism like the EU ETS is that the market decides where it is most cost-effective to reduce CO_2 emissions. I think that is an important principle of the Scheme. However, you will be aware that within it there are restrictions on the use of project credits. In the UK for Phase II we have set the limit for

project credits at 7%[1]. That basically means that two-thirds[2] of the effort reduction has to occur within the UK within the EU presumably rather than further afield internationally. That would allow the purchase of project credits through certified emissions reductions in companies in China and elsewhere. What we are clearly saying is in accordance with the principles of supplementarity a certain level of efforts—one-third of it—will actually have to occur within the UK within the EU.

Q258 Chairman: The Government is quite relaxed if that maximum percentage that can be used outside of the EU is taken up.
Ian Pearson: Yes. As Stern quite clearly demonstrates, this is a global issue and international trading to achieve CO_2 reductions objectives is an important way forward. There is a debate to be had as to how much effort is required in an individual Member State or within the European Union and how much effort needs to take place elsewhere. I happen to believe that a significant amount of effort has to be done domestically. I do not think we should be ruling out cost-effective investment in low carbon technologies in countries like China and India. From what I have seen of some of the projects in those countries, they are making a valuable contribution to reducing greenhouse gas emissions and helping those countries as well as they develop.

Q259 Dr Turner: In the first round all the allowances were given away free. This time you are going to auction 7% of the allowances. How much revenue do you expect that to raise and what are you going to do with it?
Ian Pearson: It is not possible at the moment to estimate how much money we will raise through the auction process. It would be really giving your hand away and I just do not think it is sensible at this stage. What we have said in terms of what we might do with the proceeds is we believe there are attractions in setting up an environmental transformation fund that would be using the proceeds in a variety of ways to help to reduce the UK's carbon footprint and we are looking at the detail in terms of what a new ETF would look like at the moment.

Q260 Dr Turner: What made you choose 7%? Why not a larger figure?
Ian Pearson: The maximum at Phase II would have been 10%. We looked at this and we also looked at the fact that our baseline under Phase I of the scheme, as you are aware, was higher than the figure that we originally notified to the Commission and we had some dispute about that. To take account of that different baseline position we came to the conclusion that a 7% level of auctioning rather than going to the full 10% would be appropriate for Phase II. We do believe though, as a matter of principle, that auctioning is the way forward. We do want to progressively move to far higher levels of auctioning in the future. I think you need to look at that carefully and look at the impacts that it might have on individual sectors. When it comes to the discussions that we are having on the review, we want to be debating with other Member States and also with our industry as well the pros and cons of moving to higher levels of auctioning in the future.

Q261 Dr Turner: Can I draw you out a little more on the proposed Environmental Transformation Fund because it seems an obviously desirable mechanism for recycling money to good ends. You tell us that you are not able to confirm that you are going to hypothecate the proceeds to the Transformation Fund. Can you be a little more definite than that? What else would you do with the cash? Would it just go back to the treasury or help out with Defra's budget in other areas?
Ian Pearson: I do not have anything more substantial to add other than the announcement that we made at the time that we announced our Phase II NAP where we announced that we would be setting up an Environmental Transformation Fund. We are looking very closely at the detail now of what that fund might look like and what it might deliver. I do not think at this stage that it is possible to assess how big the fund would be or how much would be raised through auctioning.

Q262 Dr Turner: You must have some outline in your mind of what you would expect from the fund if it is set up, what it is going to set out to do and what are its objectives?
Ian Pearson: We are considering the detail of that at the moment. We are looking at a range of options about where it is possible to achieve further progress in terms of reducing the UK's carbon footprint. That is the key overall objective in terms of what we want to see and it is how we use resources that might become available through auctioning to actually achieve those environmental goals that we are all committed to, some of which you will see reflected in the Climate Change bill.

Q263 Dr Turner: Would it, for instance, be used to grant aid to carbon reduction technologies?
Ian Pearson: That is clearly one of the options that we are looking at at the moment but there are a number of other options as well. I do not think it would be right for me to speculate before we have settled what our policy is on this area. We will certainly make sure that the Committee knows as quickly as possible the details of what we propose to do with an Environmental Transformation Fund. A lot of this is really only going to be clear, because of the timescales that we are talking about, post the Comprehensive Spending Review process.

Q264 Dr Turner: One of Stern's comments is that decisions which we make now about the EU ETS and its likely form after 2012 "pose an opportunity

[1] Footnote inserted by witness 10.01.2007: This should read at "8"%. This is a factual error which the Minister corrected later during the session.
[2] Footnote inserted by witness 10.01.2007: This should read "one-third" This is a factual error which the Minister corrected later during the session.

for the scheme to influence, and be the nucleus of, future global carbon markets". How important do you think the EU ETS is going to be in global efforts to tackle climate change?

Ian Pearson: It is very important already. Commissioner Dimas, when he was announcing the Commission's decisions on the Phase II NAPs, talked about EU ETS being "the nucleus of a new emerging global carbon market" and I think that is absolutely right. What we are seeing at the moment is in the northeast States of the United States moves to introduce an emissions trading scheme. There is the possibility of a scheme emerging in Japan and other countries as well. One of the things we need to look at as part of the review of the EU ETS is how the ETS might link to other schemes as part of having a genuinely global carbon market in the future. To my mind that is very clearly the direction that we need to go. We need to be able to have a global carbon price that is fixed into everyday commercial transactions and building in the carbon prices I think are one of the key ways in which we are going to tackle climate change in the future.

Q265 Dr Turner: Stern has had some impact, at least in Britain, in terms of concentrating minds on it. How do you feel about its international impact? Can you comment on that?

Ian Pearson: Nick Stern is currently visiting a number of different countries making presentations on the findings of the review. They are indeed compelling. We have a well-respected economist that is very clearly saying that the costs of doing nothing are far higher in the long term than the costs of actually doing something to tackle climate change. You have seen the figures quoted of 1% of global GDP if we take action to deal with climate change as opposed to five to 20% of global GDP if we fail to take action in sufficient time and potentially have extremely damaging climate change. That is a very powerful message indeed and certainly the reports that we get from our various posts around the world is that the Stern Report has had an influence on people's thinking but clearly there is a lot to be done when it comes to getting agreement on what happens post 2012 and what the next Kyoto framework is going to look like. We had some discussions recently in Nairobi, as you will be aware, and I think some progress was made there, but as far as the UK is concerned we want to see far more urgent progress. We are going to need to see the details and to get agreement within, I believe, the next couple of years if we are going to really move forward with the Kyoto process.

Q266 Dr Turner: What discussions have you had with trading schemes emerging in other parts of the world?

Ian Pearson: I know the Commission have been talking to what they call the RGGI (Regional Greenhouse Gas Initiative) states in the United States. We have had a number of meetings with officials from California as well who are looking at emissions trading seriously as a proposal. It is clear to me that there is a lot of interest from a number of countries and states in emissions trading. I think the United States' RGGI scheme is the one that is furthest ahead at the moment, but I have no doubt that over the next decade we will see a number of other emissions trading schemes emerge because it is a cost-effective way of tackling the biggest environmental problem facing the world today.

Q267 Dr Turner: There is action starting at state level in the US, but not at federal level, sadly, and neither is there any sign of activity in Australia where per capita emissions are even higher than the American population. Are you in any discussion to try and persuade the US Federal Government and the Australian Government to get involved in carbon trading?

Ian Pearson: We have regular discussions with the US administration and the Australian Government as well on climate change in general and on measures to tackle climate change particularly. We certainly do not hide the fact that we believe that emissions trading is an important mechanism in terms of reducing CO_2 emissions and we want it continuing to promote emissions trading. Our ambition has got to be to see a global market for carbon and to see all the key developed countries participating in emissions trading schemes. I would like to see China and India start to introduce emissions trading schemes in the future as well. I do not think that emissions trading is the total answer; it would be wrong to suggest that when it comes to reducing CO_2 emissions. If you pose the question what is a cost-effective way of reducing business greenhouse gas emissions, then emissions trading has an important role to play in answering that question.

Q268 Dr Turner: The Pre-Budget Report contained a reference to working in new partnerships with France and New Zealand to improve the workings of the ETS. Can you illuminate that any further?

Mr Mackenzie: One of my team is in Australia this week talking to both federal and state governments as part of our message of telling people about the merits of the ETS and how it works successfully. The Treasury announcement reflected ongoing discussions that both the Treasury are having with the Finance Ministry in France and in New Zealand and the discussions officials are having with Defra in those countries. There is nothing in terms of concrete deliverable at this stage although we are working very closely with the French in particular on some of the registry developments for trading where we can share common expertise and widen the mechanisms potentially also for enabling electronic trading mechanisms. The Chancellor has reflected ongoing work at an official level and the contacts he has had personally with the Finance ministers.

Q269 Dr Turner: It looks very much as if aviation is a very good candidate for inclusion in Phase II. Your previous Secretary of State and the Secretary of State then at the DTI and for Transport have lobbied the Commission to include surface transport within the scope of the ETS. Can you comment on both of those issues?

Ian Pearson: We believe as a government very strongly that aviation should be included in the EU Emissions Trading Scheme. One of the key outcomes of our Presidency of the European Union last year was to get agreement in principle that the best way of tackling aviation emissions seems to be to include it in the EU ETS. We expect the Commission to come up with proposals imminently. If you read the aviation trade press they are already speculating exactly what will be in the proposals that emerge from the Commission. From a UK perspective, we believe that an "all flights departing" model is the best way forward because that captures more CO_2 emissions. We wait to see the detailed proposals that come from the Commission. On surface transport I believe very strongly that we need to do more to reduce the environmental footprint of the surface transport industry. Including surface transport in the ETS could be one way of achieving that. I know there are potentially some technical difficulties but what I would like to see as part of the review that is going to be conducted in the first half of next year is a serious look at all the issues, the pros and cons and different ways of including surface transport into the ETS. That is not to say that it would definitely work because I know there are some respected people that say there are too many technical difficulties, it is just not a runner, but there are others who say there are ways of doing it and, from my point of view, let's look at this very seriously because we do need to do something about our CO_2 emissions from surface transport.

Q270 Colin Challen: What are the key points that you are going to press for in the Commission's current review of the ETS?

Ian Pearson: I think the review document the Commission has published highlights the key areas. You will be aware that we produced a vision document for emissions trading which was published at the same time as the Stern Review. That really sets out the direction that we think the EU ETS needs to go in the future. Some of the key things for me coming out of the review will be further work on harmonisation of the scheme and ensuring that there is a level playing field will be something that is really important, in particular links to third countries. I have said something about that already about how I expect to see emissions trading schemes emerge from other countries in the future. The review needs to look at some of the practical obstacles to linking with the EU ETS in the future because the way the directive is being written at the moment means that there will be difficulties in doing it, so there are some practical difficulties. Then we need to look at some of the key issues about how schemes might be linked because if you are going to link a scheme you do not want to link apples with oranges. We need to make sure if we are going to link schemes in the future, as I think we should do, that the schemes that we are linking to have similar levels of ambition in terms of CO_2 reductions at similar levels of effort and that they are predictable and comparable. The review certainly needs to look at all of those. Obviously scope issues will be part of the review. We have touched on surface transport, but extending the scope of the initiative to other sectors is something that we are very keen on. We have mentioned aviation as well and we hope that that will be in Phase II, let alone what happens after.

Q271 Colin Challen: We certainly need consistency across the board and I agree with that. We have seen in the announcements of the first 10 NAPs in Phase II that there is perhaps a requirement for some countries to speed up their efforts and we seem to be a little ahead of some of them, given the modest nature of our second phase NAP. In terms of the sustainability, in one of the vision statements in that document you mentioned it says: "to provide a predictable and transparent mechanism to revise EU emissions goals in the light of international commitments and the latest scientific and economic evidence". How does that square with the potential for our own Climate Change bill to put into statute 60% emissions cut targets when the latest scientific and economic evidence would suggest that more is required? Would we be pressing the EU Commission to go more than 60% and yet in our own legislation settle for that?

Ian Pearson: Can I first of all pick you up on the point that you made about what you thought was our lack of ambition in Phase II.

Q272 Colin Challen: The point I was making is that we were ambitious in the first phase—more so than the rest of the EU—and that because of that we have now reached a plateau where we can take a breather and wait for them to catch up.

Ian Pearson: I think that is wrong as well because when you look at the detailed figures, and there has been some inaccurate reporting on this, our Phase II NAP would be 13% below business as usual projections, whereas what the Commission is actually saying for other Member States is they should be 10% below business as usual. Again, in the UK we are actually doing more and we are taking a leading position. I do not accept the argument that we are taking a breather; far from it. We have taken a robust approach when we set the Phase II level.

Q273 Mr Caton: It is true that some sectors are being allowed in the UK NAP to increase their emissions in Phase II, at least according to the *Financial Times* that is what they are going out to do.

Ian Pearson: The *Financial Times* is an excellent paper and it is my number one paper of choice but when it was reporting on the Phase II NAPs it got the story badly wrong. I think it did so because it missed out those companies that opted out from Phase I of the scheme because they were in climate change agreements. When you add those in to the Phase II of the scheme that is where you get to around 30% below business as usual figure for the efforts. The story was wrong. The general principle of the allocation methodology is that we are allocating on business as usual for every sector apart from the large energy producers where there was a significant reduction. We believe that that is the right and sensible way to do things. There is an argument

about whether we should actually tighten down caps further and that is something that we will look at for future phases of the scheme. I will move on and address the direct question. The point in the text really relates to the fact that we want to see agreement on what happens post Kyoto and that we want to ensure that whatever new commitments are taken on can be incorporated in the EU ETS in the future. That is one of the key design principles. As you know, the EU ETS at the moment is designed around achieving the EU's Kyoto commitments. When you look at some of the detail of the Phase II NAP decisions the Commission has taken, it has taken those decisions to enable Member States to be able to meet their Kyoto targets. We need to make sure that the scheme potentially has the flexibility to do that for the future. That will be important for the review. There is a debate we can have on the 60% target. I know there are some scientists that say the UK needs to go substantially further than 60% and of course the 60% target is a CO_2 target, it is not a greenhouse gas emissions target and the 60% target does not include aviation and it does not include service transport because they are not part of the Kyoto protocol[3]. By all means let's have a debate about the target and I am sure that you probably will as part of the Climate Change bill. We think it is a stretching target. The key thing is for us to get on with it and to do more. I am very proud of our record to date in terms of what we have been able to achieve in CO_2 reductions and the fact that we have introduced a number of policy instruments to make a real difference. As you know, we are one of the few countries in the world that is going to hit our Kyoto targets and we think we are going to be close to doubling them. The key thing is what comes next. What further steps are we going to take in the United Kingdom? Rather than just saying should it be 60%, 65% or 68%, we should be focusing on what further enabling measures we need to take to decarbonise the UK economy. That is the key question for me rather than getting hung up about an individual percentage figure.

Q274 Colin Challen: Do you think there should be a single EU-wide cap in future phases of the scheme and is there the political will to achieve that?
Ian Pearson: The way I look at it is that at the moment there is a total cap that is made up of 25 individual Member States' caps. The key thing is to reduce CO_2 emissions in all Member States and elsewhere using market-based mechanisms as appropriate. Whether you want to have just one cap, I am not convinced that that really advances the argument a great deal.

Q275 Colin Challen: You have been understandably coy about the price of carbon in response to one or two earlier questions. We have received memos suggesting that investors need a much longer term certainty as to carbon prices before they commit serious money to carbon abatement projects. We have had that evidence from Climate Change Capital and Carbon Trust who outlined proposals for setting a minimum price in Phase III; indeed, in your own vision documents it says that we should "commit to ensuring there is scarcity in the EU ETS to enable these goals to be achieved". Both of those submissions clearly indicate the current price of carbon is far too low. What are your views on where the future pricing of carbon should go and how that should be achieved?
Ian Pearson: Firstly on scarcity, you achieve scarcity by allocating less than business as usual and you can achieve scarcity through auction and doing both of these things I think is important. We need to do more of that in future. I understand very well that what industry wants is long term signals. I think it right that we do all we can to make sure that industry knows what there is going to be a long term emissions trading scheme in the European Union and that it is going to get increasingly ambitious in what it asks in terms of CO_2 reductions. What I do not think you can do is to predict and stipulate what a price for carbon is going to be today, tomorrow, next year, in 2010, in 2015 or in 2020—that will be a matter for the market—but what industry needs to know is the EU ETS is here to stay.

Q276 Colin Challen: Is it not a hit and miss approach though? If somebody decided to market that and decide the price, even though we want to introduce this scarcity, fair enough and the Government itself puts a social cost on carbon of something like £70/t or £80/t. The current trading price of a tonne in the European scheme is less than 30 euros. Surely that is a great inconsistency? We are just not achieving our goals because the real price of carbon is a lot more than the market is currently trading at. Let's say we should aim for £100/t or £200/t. Why could we not just say that is what we want because that is the true cost of dealing with the problem?
Ian Pearson: The current price is something like 18 euros. Do I want to see the price higher in the future? Yes, I would like to see it significantly higher than it is today because I believe if you have a higher carbon price that will drive investment in low carbon technologies for the future and we will see far greater effort in terms of carbon abatement. Yes, I want to see the price higher but I do not think we can try and manage the market by setting a price for carbon or to say that the EU will underpin the price of carbon. I just do not see how that works logically in a market-based mechanism. There are fundamental difficulties in that and I do not think that industry realistically expects us to intervene in the market in a way to guarantee a price for carbon. What we do need to guarantee is that there is going to be a trading scheme and within that trading scheme there will be a price for carbon. We can provide that level of long term certainty and certainly I hope that there will be strong clarity coming out of the review about the long-term nature of the EU ETS.

Q277 Chairman: You said that auctioning was one way to drive towards a sustainable carbon price. In Phase III is there any reason why we should not have

[3] Footnote inserted by witness 10.07.06: This is factually incorrect. Surface transport is included in the Kyoto Protocol.

100% auctioning certainly in those sectors such as electricity generation where there is not a big trading element?
Ian Pearson: In my view there is not a barrier to moving to 100% auctioning in sectors like power generation. That is something that I want to argue with colleagues in other Member States about as part of the review process. When it comes to some other sectors I think that there are different issues, particularly with those that are more exposed to international trading outside the European Union, but when you are talking about the large energy producers that are pretty much passing on costs, then I think there is a strong case for early movement towards 100% auctioning.

Q278 Joan Walley: I would like to go off at a tangent arising out of one of the responses that you gave to Colin Challen's questions earlier. I am wondering about the importance of getting the whole forecasting right and the way in which that then informs the policies that we have on the next stage and the long-term plans that we have, but it was just really to ask you about the situation of the Met Office Global Warming Centre and the questions marks that there are about future funding which come from both the MoD and Defra. It seems to me that that and the projections that are there are really quite important in terms of informing future projections. I wondered if you could give the Committee some assurances about funding needed there for this kind of forecasting work to be certain to be carried out.
Ian Pearson: I have not heard of any question marks. I think that when you look at the forecasting work that we do in the UK we rightly have a leading international reputation for the quality of the work that we do. The last thing that we want to do is to put that in any sort of jeopardy whatsoever.

Q279 Joan Walley: There is no possibility of cuts taking place from that budget?
Ian Pearson: I have not heard of any proposals in that direction.

Q280 Joan Walley: Perhaps it would be helpful if you could let us have a note on it assuring us that there will not be?
Ian Pearson: It is news to me and I will investigate it. Certainly I am not aware as a result of some of the changes that we have had to make in Defra's budget for 2006–07 and for 2007–08. There is nothing in that that I have seen that in any way impinges on our forecasting ability.

Q281 Dr Turner: I have seen press reports of a 3% efficiency saving being required.
Ian Pearson: Everybody has to deliver efficiency savings.

Q282 Mr Chaytor: Coming back to the carbon, what range would you expect to see the price fall within in Phase II?
Ian Pearson: I do not think it is helpful to speculate on a range. It is similar to the question with the Environmental Transformation Fund saying how big will it be? We can all do back-of-the-fag-packet calculations, if that is still a politically correct thing to say, in the sense that we know how many allowances there are, we know how much auctioning is going to take place, we can factor in today's price of carbon, we can work out the figure. What I do not think we can do is say what is the carbon price going to be in 12 months' time or two years' time with any degree of certainty. There are futures markets that have been developing in this area just as there are in other sectors of the economy. What I am prepared to say is that I do want to see the carbon price higher than it is today. Once we ensure that there is scarcity in the EU ETS as one way of making sure that the price of carbon is higher in the future, then it will be up to market forces to determine the price.

Q283 Mr Chaytor: In terms of the concept of underpinning the price, you said you would find it difficult to envisage how that could be done. Is that official government policy that there will be no attempt to underpin the price to provide a guaranteed floor for the price of carbon?
Ian Pearson: We certainly do not have a policy to underpin it. I think it would be difficult to envisage how this could actually be done. What you have really been saying is, regardless of what is happening in the whole of the EU market, we are going to intervene and write cheques and the carbon price goes up to a certain level. That does not seem to me to be a very attractive thing for any government to do. We have had experiences of managed exchange rates and the Exchange Rate Mechanism that certainly I would not be keen to see repeated. I think we run the risk of making just those sorts of blunders if we would try and seek to underpin the carbon price by market intervention.

Q284 Mr Chaytor: What does Defra's assessment suggest that the price of carbon would have to be for new nuclear new build to become economically viable?
Ian Pearson: I have not seen any assessment from Defra about this. I do not think that the issue with nuclear new build is a certainty on the price of carbon. My sense of this is that what we need to do is to ensure a level playing field for all technologies. The Energy White Paper and the forthcoming Energy bill will give us some clarity in terms of the Government's vision for energy security for the future and that I think will drive investments decisions rather than the particular price of carbon. The carbon price however at the margin will influence investment decisions in a range of different technologies as well and it is right that it should. If I may amplify where we are in the debate on the Energy Review, when you look at it the Energy Review says that firstly we need to focus on energy efficiency, then we need to focus on renewables and we have a target of 20% renewable energy by the year 2020 which, given that we are at 4% now, means that we have to make great inroads. Then it says what is

the right energy mix after that, particularly when the nuclear industry is going down from 18% of electricity supplied to probably 6% by 2020, when we are moving from a position of being 80–90% self-reliant on gas at the moment to a situation where, in 2020, we will be importing 80–90% of gas. We have to say what is the appropriate energy mix? I do not think the answer is that you should put all or nearly all of your eggs in the imported gas market. That is why there is a case for nuclear and why I think there is a case for nuclear new build of at least the existing capacity at the moment, probably centred round existing nuclear installations and this is carbon-free energy.

Q285 Mr Chaytor: If the EU Trading Scheme is the central plank of government climate change strategy, and if our CO_2 reduction target is 20%, why was the national allocation plan not set at an amount that would have delivered that 20% reduction?
Ian Pearson: The EU ETS is a key plank but it is only one of a number of different planks that we have when it comes to our overall policy.

Q286 Mr Chaytor: None of the other planks are set at a higher level that will deliver a 20% reduction because the thinking now is that the overall reduction is 16.2%.
Ian Pearson: Yes.

Q287 Mr Chaytor: There was an option to have wrapped up the national allocation plan to fill that gap between 16.2% and 20%.
Ian Pearson: You are perfectly right in quoting the figure of 16.2% and that is our latest estimate where we will be in terms of CO_2 reductions by the year 2010. We have said that this is not our last word on the issue and that there are other areas that we need to look at. That is why we are currently consulting on an energy performance commitment, for instance, which will cover a range of non-energy intensive users. It will also, designed properly, I believe, make a significant contribution to reducing CO_2 emissions. The key thing here is what is a fair level of effort for industry to make? What is a fair level of investment for the 690 companies that are in Phase I of the EU ETS as opposed to all the other companies that are not in the ETS at the moment? What is a fair level of effort for domestic customers to make as well? What we need is a balance across a number of different sectors. It would be wrong to say we have a target and we have a mechanism that delivers carbon savings so let's just increase it so that we can achieve that target and not do anything about aviation, not do anything about road transport, not do anything about heat, not do anything about the fact that 40% of our emissions come from the household sector. We have to get the right balance here in terms of the policy effort to achieve our targets, whether it be a 20% target in 2010 or the 60% target in 2050. One of the things the Carbon Committee will do that will be established as part of the Climate Change bill will be to advise us on a trajectory but also advise us on what is the right level of effort between different sectors of the economy.

Q288 Mr Chaytor: When the Defra consultation document was published earlier this year in terms of the allocation level was it absolutely clear and specific that the eight million tonnes reduction proposed was off the business as usual projection and not off current net emissions? Are you confident that the stakeholders who were consulted understood the point from which the eight million tonnes was being reduced?
Ian Pearson: Yes, I am. We have been pretty clear all along on the basis on which we have been making our decisions. The sort of companies that are in the EU ETS are mostly large, sophisticated organisations that know how to read consultation documents and understand what the score is and, in many cases, would be very familiar with emissions trading because they will have participated in the Phase I scheme. I am very interested if you think that there is evidence to the contrary because I would certainly like to hear about it.

Q289 Mr Chaytor: The Business As Usual projections are uniform across EU Member States? All other Member States are using exactly the same methodology to make those projections and therefore calculate them?
Ian Pearson: I would defer to Niall on some of the detailed methodology of other Member States but they do tend to use Business As Usual calculations, do they not?
Mr Mackenzie: Yes. They are broadly agreed but that is one of the issues for the review. We want to make sure that the projections and the detailed allocation methodology are the same, rather than saying that there are differences from Member State to Member State, which obviously creates some distortion. We want to try and avoid that. A number of Member States have approached us to find out about the details of how we run our consultations and they have been impressed at how well the UK industry understands the scheme. Some Member States which I had better not mention have been surprised and cannot understand why their industry has reacted badly to the recent NAP decisions whereas the UK industry has not.

Q290 Mr Chaytor: Finally, could I ask about the way in which this is going to play out over the years ahead because to achieve this eight million tonne reduction there is a possibility that a significant part of it will be from financing projects overseas. Do you have any assessment of how much of the reduction will be delivered within the UK and how much will be delivered through the use of the joint limitation or CDMs?
Ian Pearson: Firstly, we are talking about eight million tonnes of carbon and 29 million tonnes of carbon dioxide as part of the scheme. As a result of what we are doing on project credits under the Clean Development Mechanism there is scope for trading within the scheme. What we are saying though,

within the overall level of effort, is that two thirds[4] of the effort will have to come from within the scheme itself and only a maximum of one third[5] will come from outside the scheme through the Clean Development Mechanism.

Q291 Mr Chaytor: Earlier you said two thirds of the total had to be within the EU, but then you referred to the UK. My issue is: is there a minimum that has to come from within the UK?
Ian Pearson: My understanding is it is within the EU ETS rather than specifically within the UK.
Mr Mackenzie: It is within the EU ETS. It is one third of effort as a maximum within the EU and two thirds outside.

Q292 Mr Chaytor: Of the British reduction target, two thirds could not take place abroad. We could be financing two thirds of our reduction target by schemes in China.
Mr Mackenzie: The Commission's decision last week or the week before was quite explicit in what it called the supplementarity effort. There is an absolute limit on Member States in terms of the effort they have to make within the scheme that Kyoto set at a threshold maximum of 50% for Member States. That installation level they would expect to be 10%. It varies from Member State to Member State but the Commission—

Q293 Joan Walley: I think Committee Members are having some difficulty hearing.
Mr Mackenzie: It is a complex area so I should try to speak up. The Commission's decision was clear that it would have to be 50% of effort made by Member States within the EU and up to 50% could be by either Member States or installations by Kyoto mechanisms. In addition, they signalled that under the scheme the installations would have to surrender allowances. They would expect a *de minimis* of 10% being the maximum that the installation could buy in terms of Kyoto credits. The UK has decided that 8% is the maximum that any individual installation can meet of its needs for Kyoto credits. The rest has to be done through either emissions reductions or by allowances from within the EU ETS.

Q294 Mr Chaytor: That is such an important issue that it would be really helpful if we could have a note spelling out those figures.
Ian Pearson: I would be happy to ensure that is provided. There is a key debate that needs to be had as well about how much effort takes place in the UK or indeed in the European Union and how much effort takes place internationally.

Q295 Mr Chaytor: How do you measure effort?
Ian Pearson: The purist economists will tell you that a tonne of carbon saved is a tonne of carbon saved and it does not matter whether it is in Birmingham, Bangalore or Beijing. I think that there are strong arguments for saying that making effort in the UK and decarbonising our economy is in the long term interests of UK business so we should be making effort here rather than necessarily buying credits elsewhere. With all these things, there is a mix and a balance to be struck. It would be clearly wrong for all the effort to take place in the UK regardless of the cost of making CO_2 reductions. It would be equally wrong to say that all the effort should take place in the developing world where there are cost effective ways of that being done. What is the appropriate balance? Is it 50%? Is it two thirds domestically? I think that is a debate that we need to have in the United Kingdom in the future. It is something that I hope we can open out for discussion as part of the debate that we will have on the Climate Change Bill.

Q296 Chairman: That would be helpful. For the sake of clarity, in the longer term looking at the 60% target for 2050, do you envisage that a substantial proportion of that 60% target could be met by buying reductions outside the UK? Would a third, for example, be acceptable?
Ian Pearson: Some of that 60% target will be achieved through the EU ETS and the EU ETS rules at the moment allow for trading. The 60% target is not based on 60% all taking place in the United Kingdom at the moment. This is something we will want to return to as part of the wider debate.

Q297 Chairman: Given what you have just said about decarbonising our economy, the implication of what you said is that you would like a substantial proportion of that 60% to be met domestically.
Ian Pearson: I think it makes good sense to do so on a strict, economic interpretation. The key thing is reducing global CO_2 emissions. It does not really matter from an environmental point of view where those CO_2 emissions are effected. When you look at the reality, it does make good sense to make sure that a large part of the effort of reducing our carbon footprint takes place in the United Kingdom as well. You get long term benefits for business by taking carbon out.

Q298 David Howarth: I am still a bit confused about this CDM JI credit business because, as I understand it, CDM JI credits take into account other greenhouse gases, not just CO_2. Are you not counting reductions in other gases against the CO_2 target? The CO_2 target is a separate target. There is a greenhouse gas target and also a CO_2 target.
Ian Pearson: We have a greenhouse gas target that we are committed to under Kyoto and that is a reduction of 12.5% over the 2008 to 2012 period compared with 1990 levels. As you know, the Kyoto commitments are all about greenhouse gases. We have a separate domestic target for the UK of a 20% CO_2 reduction by 2010. We have a long term goal of 60% by 2050 that we are going to put into statute. Now we come to the complicated bit which is how project credits work. You are right that project credits are based on greenhouse gas emissions but there is a calculation which gets you to CO_2

[4] Footnote inserted by witness 10.01.2007: Factual error, this should read "one third".
[5] Footnote inserted by witness 10.01.2007: Factual error, this should read "two third".

equivalence and it is the CO_2 that can be bought. There is a formula for getting you from the greenhouse gases to CO_2 equivalence that is in keeping with the Emissions Trading Scheme. I am not sure I have explained that particularly well but I think you understand the principle.

Q299 David Howarth: I know what you are getting at. There is a kind of equivalence of the other gases in terms of CO_2 which you are counting with the CDM or JI, but you are not doing that generally, are you, domestically? You are not saying, with your domestic target on CO_2—or are you?—that we are counting reductions in other gases using these equivalents against that target?
Ian Pearson: No. In the UK our 2010 target for CO_2 emissions is just counting CO_2. Under Kyoto, we will account for other greenhouse gases as well. We measure all these things but we are not including equivalents of them in our CO_2 target that we have set domestically. We would probably be doing a bit better if we did.

Q300 David Howarth: The confusion is in the CDM JI field you are doing it in equivalence but you are not with the domestic targets and I cannot really see how that is coherent.
Ian Pearson: This is because the CDM project credits are allowed under the EU Emissions Trading Scheme. There are good reasons why that was built into the scheme and I do think it provides a helpful international link that is enabling some companies that need to buy credits in the market to invest in those credits in developing countries. It is helping developing countries as well. I went to China and talked to a number of companies who have been recipients of CDM projects and it can make a real difference. Again, there are some interesting policy questions about how the CDM operates for the future and how it links to environmental standards that are set in individual countries as well. That could be something the Committee will want to look at in the future.

Q301 David Howarth: You have talked a lot about comparing what is proposed with Business As Usual. The target for tonnes of carbon is not compared to Business As Usual at all. It is an absolute target. You start with 1990 where we were emitting 161.5 million tonnes of carbon. You knock off 20% of that and you get to 129 million tonnes of carbon. That is an absolute target, not compared to how it might go up otherwise. In the latest pre-Budget report, it says that Phase I of the EU ETS will reduce carbon dioxide emissions in the UK by around 4.6 million tonnes of carbon below the projected emissions of the installations covered by the scheme by 2007. That is against Business As Usual. Is that not going to mislead ordinary readers? Are not ordinary readers going to think that that means a reduction of 4.6 million tonnes of carbon towards the eventual target of 129; whereas that is not what is being said, is it, as far as I can tell? It is against Business As Usual.
Ian Pearson: We have always been quite clear on the basis on which we have been setting the Phase II NAPs and the industry has been very clear with regard to the basis on which we are doing this. It has been based on Business As Usual projections. The fact that there is a high degree of acceptance by industry and a high degree of understanding by industry of the nature of the targets I think is very welcome. I am not quite sure what the point is that you are getting at.

Q302 David Howarth: Take the eight million tonnes in Phase II. Is that towards meeting the 129 million tonne target or not?
Mr Mackenzie: Yes.

Q303 David Howarth: You are saying that Business As Usual is a level amount of carbon emitted? I do not think you are doing that.
Ian Pearson: No.

Q304 David Howarth: That is the point. Business As Usual is very different from the 20% below 1990 levels target. That is an absolute target. It is not in terms of how much carbon would be emitted in 2010 given the rate of growth that we had in 1990. It is an absolute target about 1990 so the target is 129 million tonnes.
Ian Pearson: Are you talking about the 2010 target?

Q305 David Howarth: Yes. The real question is: if you look at that real target as opposed to all the Business As Usual stuff, in 2004 we were, what, a quarter of the way there and not doing very well compared to 2010. How are we doing now and is the government going to come out with an official assessment of how likely it is that we will meet that 129 million tonne target in 2010 rather than simply talking all the time about Business As Usual?
Ian Pearson: I think you are confusing a couple of things here. Our best official estimate at the moment is that we are on course to achieve CO_2 reductions of 16.2% below 1990 levels. These figures will vary.

Q306 David Howarth: You are six million tonnes short?
Ian Pearson: We are short of our 20% target at the moment.

Q307 David Howarth: What is the government going to do to meet that six million tonne target by which you are short? It includes the eight million which we have already talked about, does it not?
Ian Pearson: Yes. Let us be clear. We are not planning through the EU ETS to address this issue prior to 2010 because we have consulted on the range and we are setting the NAPs. We have to look at other policy instruments that might be appropriate that will enable us to achieve our 2010 target. As I said very openly, the Climate Change

Programme Review and the Energy Review are not the last words on the subject. Our 2010 target is a very challenging one and the fact that high gas prices have meant more coal has been burnt in the UK in the last two or three years has certainly made the targets even more challenging, but we are still looking at what we can do to do more to achieve our 2010 target.

Q308 David Howarth: Can you give us an idea of what that might be? In terms of the EU, you have already talked about very ambitious targets for 2020 but the mechanisms that are being used now obviously do not seem to have produced the desired effect. What would you recommend are the lessons learned from the failure of the existing mechanism to reach the target for that future period?

Ian Pearson: I do not accept for one moment that it has been a failure of either UK policies or the EU ETS. The EU ETS has got off to a good start. There is a high level of compliance. There have been lessons learned. The fact that the Phase II NAPs have been allocated on a 10% below Business As Usual projections is going to ensure greater scarcity in the scheme for the future. The fact that we are having a review of the scheme to see how it will operate beyond 2012 gives us some opportunities for the scheme to do more for the future. All that is very good and positive news. Similarly, when you look at the UK's performance in tackling climate change, we are one of if not the leading country in the world when it comes to taking action in this area. We were the world's first government to introduce a climate change levy and climate change agreements and an emissions trading scheme with the UK ETS. We were the world's first government to introduce an energy efficiency commitment. Do we need to do more? Yes, we do need to do more. Certainly we need to do more if we are going to hit that 20% target for 2010. It is not that our policies have failed; it is the fact that there is more to be done here.

Q309 David Howarth: The point is not that those are bad policies; it is that emissions are rising. I cannot see how a situation when emissions are rising can be said to be a success.

Ian Pearson: Our best available estimates are that we are 16.2% below. We are heading in the direction of achieving those levels of CO_2 reductions. If you are saying to me, "Have CO_2 emissions risen since 1997?", yes, they have slightly. The latest figure is 2.3%. Overall when you look at greenhouse gas emissions they are significantly down and they look as if they will be 23 to 25% below 1990 levels over the Kyoto commitment period. We should bear in mind that, at the same time, if you go back to 1990, the UK economy has grown by over 40%. If you go back to 1997, it has grown by about 26%. We have substantially broken the link between growth and CO_2 emissions. Yes, we have more to do in the area but the situation would be significantly worse if it was not for the range of measures that we have introduced since 1997.

Q310 Chairman: So that I can be clear about the contribution that the first phase of the ETS has made, are you saying that has cut emissions by 4.6 million tonnes?

Ian Pearson: Yes, we are.

Q311 Joan Walley: Taking up the point about more to do and relating it to the whole issue of competitiveness, I really want to try and explore that a little bit and also, if I may, to say how heartened I was to hear you say it matters what we do in Birmingham, Beijing and Bangalore. Can I add Birstall to that list as well because I very much hope we will have the opportunity to discuss that with you in more detail in the not too distant future. On the competitiveness issue, the manufacturers' group, the EEF, have said to us that the savings that have been made so far have been very much the lower hanging cherries, the easy savings to make. They have really made it clear that if we are going to make substantial progress on top of what has already been done we do need to have a step change in the technologies. Their argument is that the ETS as it stands at the moment would not necessarily drive any carbon reductions from their processes. I am wondering what your answer is to that.

Ian Pearson: There is evidence that the ETS is already at the moment achieving CO_2 reductions and I have no doubt that it will continue to do so. Under Phase II we will see even greater CO_2 reductions as a result of it. When you look at it at an individual company level, the individual company has a choice. There is a clear incentive there for them to look at reducing their own emissions and then, depending on the allocation that they have, being in a position where they can sell some of their allowances if they have managed to achieve CO_2 reductions and maybe they do not need all the allowances that they have been allocated; or, if they are in a situation where they need to buy in allowances, they can either look to do that through purchasing EU allowances or through project credits under the Clean Development Mechanism. There is a range of alternatives. The way the system works at an individual company level is to give them an incentive. If we tighten the caps on emissions so that everybody has to do something, we put companies in a situation where there is a real pressing need to either do something domestically within their own business or businesses or to buy credits in the market place. That is where I think the issue of competitiveness comes in as well, which is important because the more you tighten the caps on companies and require them to take action the more potentially all that is going to not just involve requiring them to achieve CO_2 reductions but it is going to potentially cost them money, either taking action themselves or by buying allowances. You do need to bear in mind the economic consequences of taking those sorts of actions because frankly it does not really do any good if you make life so difficult for a business in Birstall that it does locate to Bangalore and emits just as much, if not more, CO_2 there. You have just driven it out of the UK. That is why I am very clear that, when we are looking at the ETS, we

do need to be aware of the competitive position of the European business and that is one of the factors that will need to be considered as part of the review as well.

Q312 Joan Walley: I am very pleased to hear that. If we are going to have to bring about a step change in the technology, that is going to cost money. I just wonder if there are any examples of where you are working with companies specifically to look at how that could be achieved. Have you any examples of that?

Ian Pearson: There are a number of good examples where companies have had a look at their carbon footprint and just become far more efficient as businesses and produced substantial bottom line savings. As you know, we fund the Carbon Trust which works with a lot of UK businesses, providing them with advice on how they can become more energy efficient. If you look at their website, they have a range of stories about how they have helped companies not only reduce their carbon footprint but improve their business performance. There is a lot that can be done I think in terms of resource efficiency.

Q313 Joan Walley: We have interviewed and had the Carbon Trust here as witnesses. From my point of view, I would like to see a lot more being done a lot more quickly, in a much more focused way with the government working with companies to see how we can move on to this new cutting edge technology that is going to be required if we are going to be keeping competitiveness here. You cannot provide us with any examples where there has been a close working relationship between government and companies?

Ian Pearson: I can provide you with a list of case studies of companies that have introduced new technologies and it has helped reduce their energy bills and their CO_2 emissions if it would be helpful to the Committee.

Q314 Joan Walley: I think it would be helpful to know how the government is working with firms that are covered by the EU ETS in order that we can see how ever more progress is being made.

Ian Pearson: A lot of the companies that are governed by the EU ETS, by the very nature of things, are extremely big, sophisticated companies and do not require government to teach them anything. In fact, there are things that they can teach us about energy efficiency. There are some relatively small companies in the EU ETS as well where advice and support may well be appropriate. The key challenge for us is not with regard to EU ETS companies; it is the whole range of companies that are not currently in the EU ETS but could do more to reduce their CO_2 emissions. It is working with those companies that I see as being probably a bigger priority than working with those that are currently in the EU ETS.

Q315 Joan Walley: A brief note would certainly be very helpful. A second response I want to make to your reply is that that fits in very much with what the TUC have said to us in evidence. They really believe it is important that the government should be working with businesses and with trade unions to help the economy respond to the challenges that we face with carbon emissions. One of the things that was raised and flagged up with us was the need to do this through investment in skills training and in workforce development. I wonder how and when that is taking place and what input you have into that.

Ian Pearson: I have had a number of meetings with the trade unions about what more they can do to help green our work places. Defra provides a limited amount of project funding at the moment to help this through the trade unions. I think there is quite a powerful agenda there that could be developed. I have had meetings with TUSDAC—I cannot remember what the acronym stands for—a group of interested trade unions about how we can work together more and utilise the skills and expertise of their members to encourage companies to do more. In some cases, companies are extremely willing and up for this agenda. In other cases, maybe they need some persuasion. Getting some people in the work place to talk to management about this can be of assistance and that is one of the things we have been exploring.

Q316 Joan Walley: Using a constituency interest, it might well be useful for you to explore the ceramics industry when you visit. One of the issues that the Carbon Trust raised in their evidence to us was that some companies might be more exposed in the UK because they face competition from outside the EU and perhaps more exposed as well because they have not made as many cutbacks or as many carbon reductions as we have in the UK. I wonder how you react to that.

Ian Pearson: We need to be very well aware of the position of companies that are in the full force of international competition. The aluminium industry, the steel industry and ceramics are the areas where competition is intense. Anything that impacts on the bottom line is a serious consideration with regard to their competitive position. When it comes to the design of Phase II, the ETS, we have had discussions with the ceramic industry about their NAP and we have been able to satisfy them over some of the concerns they had about it originally. The key thing for me here is that overall we should not be seeing the EU ETS as being something that damages Europe's competitive position. Far from it. The fact that it is helping to deliver carbon savings and helping to get largely European industries to a position where they are decarbonising their businesses is very much to be welcomed. I do here want to stress again though that the competitive position of UK industry and indeed European businesses has to be something that is taken into account as part of the overall review. I do not believe that necessarily doing the right thing by the environment means that you are doing the wrong thing for a business. One of the key lessons here is

that doing the right thing by the environment can be very good for your business in the long term and we are keen to encourage businesses to see that.

Q317 Joan Walley: Looking to phase II of the EU ETS, I think you are probably familiar with the three options that the Carbon Trust have put forward in terms of competition looking at international, sectoral agreements, the use of border tax adjustments or a third option which would be to make allocations proportional to production levels. I just wondered if you had any views on those three options?

Ian Pearson: The Carbon Trust has come up with some thoughtful ideas that are part of the debate that we need to have on the review. I would not want to comment in detail about the individual options or express a preference at this stage. It is helpful to have people thinking about different options for the future. That is what the review needs to look at.

Q318 Joan Walley: Would you want to comment on the proposal that has come from the employers which would remove certain sectors from the EU ETS and then make them subject to a separate energy efficiency reward and penalty scheme? Do you think that would have merit?

Ian Pearson: As part of the review process we will want to contribute fully. As you know, it involves all EU Member States and I am very encouraged by the Commission's approach of tackling the review at the moment. We have an open minded view as a government about the best way forward. The only thing that we really want to stress is that the review has to be done in a timely fashion. It has to clearly demonstrate that the Emissions Trading Scheme is here to stay for the long term and to give the long term market signals to business that are required if they are going to take some major investment decisions in the future. It has to be clearly focused on reducing CO_2 emissions. All those are key goals. You have seen our vision for emissions trading as a document and I think that fairly sets out our position. Within that there will be a range of Member States and a range of different organisations that have different views. We will want to consider all of those but in terms of the vision and where we are going in the UK I believe we have a very clear vision of what we want the EU ETS to deliver for the future and we want to ensure that that can be achieved.

Q319 Chairman: You have mentioned aviation two or three times. I wanted to be clear as to the basis on which you think it would best come into the ETS. You said it was covering all the flights that took off or landed, or was it both?

Ian Pearson: I personally think an all flights departing and landing model would be most likely to achieve the biggest level of CO_2 emission reductions. For that reason I think it is the natural starting point in terms of a preferred policy position.

Q320 Chairman: The impression we had in the discussions we had with the Commission last week was that that is also the Commission's likely starting point, taking off and landing. It will of course run into significant resistance, not only in the United States but certainly in other countries as well. Given that that is the case, is this going to cause a delay in getting agreement? When is the earliest date we are likely to get aviation into the ETS?

Ian Pearson: As you know, there are a number of things that have to happen before we can get agreement overall on this. It will be a matter for all Member States to express views on and to come up with an overall position. That will go through the normal process. I gather the Commission have been saying that they think 2011 is a feasible date. In the UK we have always been wanting to press for aviation to come into the ETS as soon as possible and I do not think there are insuperable logistical problems for aviation coming into the Emissions Trading Scheme. I would like to think that the Member States can agree to taking appropriate action. I would be very disappointed if the United States decided that it wanted to challenge any decision that the European Union took on this.

Q321 Chairman: I am sure there are not insuperable logistical problems but the negotiations are still going to be very difficult. You have referred already to the fact that we want the United States to agree. Absolutely critical to the success of including aviation are the baseline figures. We learned that from Phase I when the baselines were set too high. Would you support baseline figures which were, say, based on the actual emissions in 2005?

Ian Pearson: That would probably be a realistic approach to take. I would like to look at what the other options are. You cannot have historical baselines that go back a long period of time because aviation has been growing strongly. Talking of 1990 baselines would fly in the face of common sense.

Q322 Chairman: Even if aviation does come in in 2011, the growth of aviation would mean that a 2005 baseline would involve matters right from the outset.

Ian Pearson: We have to look at what the design of the scheme is. It seems clear to me that aviation is already a significant and set to be a substantially growing problem when it comes to CO_2 emissions and indeed other greenhouse gases emissions as well. That is why we think that it should come into the Emissions Trading Scheme. The level of effort that we should require of aviation is a matter for debate within the European Union and other Member States. In the UK, we reckon that aviation accounts for around about 5% of CO_2 emissions at the moment and rising. The Aviation White Paper suggested that aviation could account for 25% of our CO_2 emissions by 2030 so it is clearly an area where we need to take action. It is best to take action at an EU level. Whether that action involves setting reasonable baselines and requiring reductions from them or whether it requires high levels of auctioning, for instance, as one way of moving forward, there is

a range of different options that we need to discuss. We look forward to seeing the Commission's proposals which I gather are pretty imminent.

Q323 Chairman: It is not quite good enough to say that we are going to look at their proposals or that there is a debate to be had. You referred earlier on to the pioneering role that Britain has played in addressing the whole issue of climate change and in particular in relation to emissions trading. Surely it is for us to be now trying to influence the shape of those proposals very proactively? It would be helpful if we could have a clear statement saying, "Yes, there needs to be a very tight baseline figure". If it could be earlier than 2005 so much the better. Yes, a substantial proportion of these allocations should be options rather than handed out free to the airlines. There is an opportunity here for the British government to give a very strong lead and to have a big influence over the outcome of how aviation comes into the scheme.
Ian Pearson: I certainly agree that there is a good opportunity for the UK to express early opinions. That is why we have pushed very strongly to get aviation into the EU ETS in the first place. It is why we have pushed the Commission strongly on an all flights departing model rather than just flights within the European Union. There is a big difference between those two approaches in terms of coverage of CO_2 emissions. It is why we will be pushing strongly on auctioning and on baseline data as well.

Q324 Chairman: When did talks start with the aviation industry?
Ian Pearson: Probably soon after the Wright brothers.

Q325 Chairman: In relation to entry into the EU ETS?
Ian Pearson: We have had regular, ongoing discussions with the aviation industry on a range of matters, including the EU ETS and it has been encouraging that the aviation industry in the UK has been supportive of aviation's entry into the EU ETS for a considerable time.

Q326 Chairman: What is not quite so encouraging is the evidence we had from the aviation industry in May when they said they had not even begun to talk with the government about the basis on which they would go into the ETS.
Ian Pearson: My understanding is that the aviation industry has been supportive of going into the ETS. Whether they feel as if they have been consulted in terms of the detail, about how that would operate as opposed to the principle of including in the ETS is something we might disagree on. From reading the paperwork prior to my taking over responsibility as Minister for Climate Change, it seems clear to me that the aviation industry have accepted the principle of being in the ETS and have been talked to about that certainly prior to our presidency of the European Union last year.

Q327 Chairman: That is not at issue. They have certainly made many public statements saying that they want to get aviation into the ETS. What I am trying to establish is, given the hideous complexity of the negotiations that will take place, the very optimistic target of achieving this by 2011 and the urgent need to achieve that target, either the industry has started talks with the government about the detail of the allocations or it has not. It does not seem to be clear whether you think they have started or they have not started.
Ian Pearson: I have met representatives from the aviation industry and talked to them about an all flights departing model and other options. I am sure that meetings have taken place at official level as well about more of the detail.
Mr Mackenzie: The Department for Transport which we work very closely with on this are in regular contact with the industry as indeed are we. The last meeting we had with the industry as a whole which covered this issue was only a matter of a few weeks ago where we were discussing speculation, at that stage, as to what might be in the Commission proposal. I do not think it is quite fair to say that we have not had any contact with the industry if that is what they said to you earlier. I do not know what they aspire to in the level of detail. We cannot discuss the detail of a Commission proposal which we have not yet received. We can certainly discuss some of the issues such as all departing flights. Some of this is covered in the Aviation White Paper 2003 so the issues have been discussed between different parts of the aviation industry. We have not discussed the scheme as a whole as yet in any detail because we have not reached any detail.
Chairman: The statement they made to us was in May so that would be quite consistent with meetings in the last few weeks. I just wanted to try to establish how far this process had gone.

Q328 Mr Chaytor: The Government has written to the Commission recently suggesting that surface transport should be included in the trading scheme. Is the concept that that will be in addition to road pricing, congestion charging, any changes in fuel duty and the use of variable vehicle excise duty? You are not considering inclusion in the scheme as an alternative to the existing policies we have in place?
Ian Pearson: A lot of this relates to the Department for Transport and their areas of responsibility.

Q329 Mr Chaytor: The letter was signed by the Secretary of State for the Environment as well.
Ian Pearson: What we have said is that we would like the Commission to consider options for including surface transport in the EU ETS. It is sensible to consider what options might be available. We need to look at what is the appropriate mix of policy instruments that is going to achieve our overall objectives when it comes to surface transport. Inclusion in the EU ETS could be one of them but it might be decided that that is not the best way forward and that other policy instruments would be more appropriate.

Q330 Mr Chaytor: What are the obstacles that you could see and has there been some discussion with the oil industry, the motor industry, to date?
Ian Pearson: There are a number of key issues about how you might design a scheme which would include surface transport, whether those would be something that would be done through vehicle manufacturers or through the petroleum retailers. There are a number of key questions that need to be considered before we assess whether it would be feasible to include surface transport in the EU ETS. Personally, I think it is unlikely that you would have a personal transport allowance as part of the EU ETS because it is not designed for that. It is about larger installations. We need to think through what large installations relate to the surface transport industry could be realistically asked to do here that would have a positive CO_2 benefit. Looking at these issues as part of the review would be a good thing to do.

Q331 Mr Chaytor: What is your judgment about the likely reaction of the motor manufacturing companies?
Ian Pearson: I do not think they are necessarily going to like it in particular. I can foresee difficulties in getting surface transport included. We are in a situation at the moment whereby at an EU level, as you know, there has been this voluntary agreement on reducing emissions from vehicles, where sufficient progress has not been made and where we have been encouraging the Commission to consider looking at all available options, including legislating for standards. Looking at other options through emissions trading might be one way forward as well. When you look at the carbon footprint of the transport industry in Europe, it seems clear to me that we have to be doing something about this if we are serious about tackling climate change. What is the best way of doing it? Is it through voluntary standards? Is it through regulation? Is it through emissions trading? I do not think we have thought through this in Europe yet. I do not think we have thought it through in the United Kingdom yet, though I think we are leading a lot of the thinking.

Q332 Mr Chaytor: In terms of the voluntary agreement, this is the target that all new vehicles should emit an average of 175 grams per kilometre by 2007. Is there a further stage to that voluntary agreement? Is there a more stringent target in place for 2010 or the period after that, or is the 175 grams by 2007 the end?
Ian Pearson: I cannot remember all the detail on this. I think you will find that the situation is that the targets that were set in the voluntary agreement do not look as if they are going to be met at the moment. That is why the Commission is looking at what steps to take next. It might be helpful if I gave the Committee a note.

Q333 Chairman: Supposing those steps were to replace the voluntary target with a stringent, mandatory target. Would that have Britain's full support?
Ian Pearson: We are at the stage where we have been encouraging the Commission to consider all options. I do not think we have expressed a view about what is the most appropriate thing to do.

Q334 Chairman: If a voluntary target fails, what other option apart from a mandatory target exists?
Ian Pearson: You make a perfectly valid point about this. Having a mandatory target would have some merits but so might including surface transport in emissions trading as an alternative.

Q335 Dr Turner: There is one sector of industry which is not particularly exposed to international competition, which shows no sign of having suffered under the first round of ETS in any shape or form and the estimates vary between 670 million and 800 million of the windfall profits that the power companies have made as a result of being able to pass on any costs they have incurred directly plus an extra profit margin. Do you think this is acceptable?
Ian Pearson: We must treat all figures in this area with some degree of caution for a variety of reasons. You will be aware that these are not likely to be necessarily entirely accurate. It is fair to say that when you look at the large energy producers by and large these are insulated from international competition and have the ability to pass through into prices. I accept that windfall profits have been made by the sector. However, this has helped to develop the EU ETS overall as a scheme and I am keen that we move towards 100% auctioning when it comes to this particular sector. In Phase II, as you know, all the effort at reduction is focused on the larger electricity producers. The auctioning proposals are focused on the sector as well so it is an area that is being addressed.

Q336 Dr Turner: Is there any intention in organising the auctioning that will be used as a way of pulling back some of these windfall profits to the Treasury?
Ian Pearson: It is obviously a matter for the Treasury as to what happens with the proceeds from the auctioning process. As I said earlier, when the announcement was made on Phase II and the level of auctioning in Phase II, it was clearly said that an environmental transformation fund would be set up. I do not think I have anything further to add on that. One of the key messages here is that the large energy producers have been instrumental in ensuring that we have a successful EU ETS and we should want to bear that in mind for the future.

Q337 Dr Turner: In Defra's own memo it says that auctioning the allowances will reduce the power companies' profits but then it says that it will not have any additional impact on electricity prices. What makes you so confident that the power companies will not just pass it on again?
Ian Pearson: We have done various modelling exercises looking at the price impacts of the different options which we consulted on and they have led us to making a decision on eight million tonnes of carbon reduction and 29 million tonnes of CO_2. Our estimate is that the effect on industrial prices would

be 1% with a range of nought to 3%. Modelling suggests the estimate on domestic prices will be about half of that, so $\frac{1}{2}$ of 1%. Those are the best figures that we have. That is building into the model the figures on auctioning and we think it is the best information we have on what the likely price effects are going to be.

Q338 Dr Turner: But it is only a model.
Ian Pearson: Exactly. It is only a model. The fact that industry overall has welcomed the NAPs and the process indicates that I do not think the industry has substantial concerns that there will be major damage on price effects as a result of this.

Q339 Dr Turner: The Carbon Trust said to us last week that the power companies are tending to sit on their profits at the moment and that they are certainly not competitive in low carbon electricity generation technologies, possibly because they are waiting for more certainty in the carbon price or whatever. Can you think of anything more that you could be doing to encourage or force the electricity companies to recycle those profits into low carbon investment?
Ian Pearson: There is already investment in the pipeline from the large energy producers. There have been some recent announcements of proposals on a coal gasification plan with carbon capture and storage which is very interesting. I personally think that carbon capture and storage is a key technology for the future that needs to be rapidly deployed throughout Europe and internationally. It is fair to say that we are going to see significant levels of investment in capacity over the next 10 years when it comes to the energy generators. The key question will be ensuring that that is low carbon investment. There is a range of big decisions that are ready to be taken at the moment. The more clarity there is with the EU ETS, the more clarity that we are able to give through the Energy White Paper, that will help bring forward this investment and low carbon investment.

Q340 Dr Turner: Presumably Defra will be pressing the DTI to include something in the Energy White Paper to address this because some of the biggest hits we can make in carbon reduction have to be in the energy industry.
Ian Pearson: It is not a matter of pressing; it is a matter of working closely with the DTI. We worked very closely with the DTI on the energy review which will be published in July. We are working closely with them at the moment in the run up to publishing the Energy White Paper. What industry wants to see is a long term vision for the energy supply industry. The Energy White Paper will provide exactly that and it will give the market the confidence it needs in terms of what our strategy is so that they can make the big ticket investments that I know are in the pipeline at the moment.
Chairman: Thank you very much. We have covered a lot of ground and we are grateful to you for spending so much time with us. It has been helpful to us and I am sure we will discuss these issues with you again before long. We are grateful to you for coming.

Written evidence

Memorandum submitted by the Airport Operators Association

Submission of evidence by the Airport Operators Association for question 8:

How should aviation be included within the ETS? What are the latest indications of when it will be included?

Overview

The goal of policy makers is to stabilise greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous man-made interference with the climate system. The AOA fully supports that goal, and believes that 'mainstreaming' aviation by incorporating it into an open emissions trading scheme is the most economically efficient and environmentally effective way of ensuring that aviation bears and fully internalises the cost of its CO_2 emissions. Other (ie non-CO_2) emitters might also be effectively addressed in the longer term via emissions trading in their own right when their full effect and inter-relationship is properly understood—but in the shorter term will need to be addressed via alternative mechanisms in order to avoid the perverse impacts that would necessarily arise were they to be traded as a simple multiplier of CO_2.

We consider that CO_2 emissions are most effectively addressed by their inclusion in the EU emissions trading systems (Directive 2003/87/EU). However, we equally strongly consider that NOx and other non-CO_2 emissions are, at least for the immediate future, most effectively addressed by the employment of modest en-route charges in order to raise revenues that would be wholly used to fund serious scientific research into the effects of these emitters at altitude. This increased knowledge will then allow the economic measures to be further and better refined in the longer term.

Geographical Scope

The AOA advocates the 100% inclusion of extra-EU activity, as this would be the only way to avoid distortion between short-haul/intra-EU carriers and those serving the long-haul/extra-EU market. The 100% inclusion of extra-EU activity would also avoid distortion of the EU outbound leisure market (and the associated perverse environmental impacts that would otherwise result) by not inappropriately favouring the long-haul/extra-EU traveller through adding costs only to the intra-EU leisure market.

And although it might be argued that the 100% inclusion of extra-EU activity could distort the inbound leisure market (eg by encouraging a North American tourist to consider destinations other than Europe) it is felt that this impact is likely to be minimal compared with the other costs and factors influencing such a decision.

Trading Agent

The AOA considers that the principle participating agent to this process should be selected on the basis of that sector most likely to permit the introduction of emissions trading:

(i) at early date;

(ii) with least contention;

(iii) with minimum ongoing audit/costs etc; and

(iv) with nil or minimal potential for market distortion, both within and beyond the EU aviation industry.

The AOA does not at present have a view on which potential trading agent best fulfils these criteria, and believes that the decision should be based on conclusions from further research.

Allocation Methodology

The performance indicator recommended for use and reporting of carbon emissions by the UK cross-industry "Sustainable Aviation" project is "CO_2 emissions per RTK".

CO_2 Data Reporting

The AOA suggests that "actual fuel consumption data" should be used as the basis for the calculation, since any option based on "modelling" would reduce the incentive for improved operational practice and ATC enhancements.

Non-CO_2 Data Reporting

The AOA does not believe that NOx emissions and other non-CO_2 impacts are currently sufficiently well understood or quantified to be included in an emissions trading scheme without risking major perverse impacts. In the short-medium term therefore, the AOA supports the use of other more appropriate economic instruments to address these impacts, using any revenues raised to fund serious scientific research into the effects of NOx and other non-CO_2 impacts at altitude. This increased knowledge will then allow the measures to be further and better refined in the longer term.

Trade-Offs

The AOA recognises that trading for all aviation related emissions as a simple multiple of CO_2 will most certainly result in perverse outcomes in respect to the non-CO_2 impacts. It is well established that focussing engine technology design purely onto the goal of reduced CO_2 emissions will almost inevitably result in increased emissions of NOx and/or water vapour etc. Thus any trading mechanism that was based on a simple multiple of CO_2 would not only remove any incentive from the carriers (and therefore from the manufacturers) to address the issue of non-CO_2 impacts, but could well result in these latter impacts becoming far worse in subsequent engine designs.

The airport community is seriously concerned with any such proposal because of the potentially significant negative impacts that it could have on local air quality around airports.

Timescales

The AOA supports the British government and Sustainable Aviation position of including aviation into the ETS by 2008 or as soon as possible thereafter. We have lobbied hard, through our European partners in ACI, for the EU to bring legislative proposals forward and would be very disappointed if, as now seems possible, such proposals are not tabled by the end of 2006. In this event we would look to the British government to put maximum pressure on the Commission to ensure proposals are tabled in the spring of 2007.

October 2006

Memorandum submitted by the British Cement Association

Executive Summary

1. Significant carbon dioxide reduction has already been delivered in the UK cement industry and with its carbon strategy the UK cement industry is aiming for further savings. However, further CO_2 reduction will only be made with the correct regulatory and market frameworks where new investment is not penalised or hampered.

2. The lessons from Phase I suggest that the correct framework is emissions trading rather than taxation. Consequently, the cement industry would like to see the removal of the double regulation presented by the climate change agreement/climate change levy to remain with a single measure based on emissions trading.

3. In Phase II and beyond every effort should be made to avoid transferring production, and therefore emissions, overseas. Transitional arrangements could be put in place in the interim toward a global trading system.

4. Looking forward, any emissions trading scheme should be based on technological incentive and consequently the auctioning of allowances is not appropriate. Auctioning does not provide a technological standard to be achieved and as such benchmarking should be considered the prime method to replace the historically based allocation method used in Phase I.

5. Industries should not be expected to reduce emissions beyond their abatement potential. To ensure international competitiveness investment lifecycles need to be taken into account when developing emissions trading schemes.

6. Furthermore, emphasis should be placed on resource conservation and integrated environmental policies. The cement industry can contribute significantly to the UK waste management problems by using waste derived fuels instead of traditional fossil fuels. There are a number of advantages to this but barriers in the regulatory system need to be removed to encourage fossil fuel replacement.

THE IMPACT OF CLIMATE CHANGE MEASURES ON THE UK CEMENT INDUSTRY

1. The UK Cement Industry The British Cement Association is the trade and research organisation that represents the interests of the United Kingdom's cement industry in its relations with Her Majesty's Government, the European Union and relevant organisations in the United Kingdom. The members of the BCA (Buxton Lime Industries, Castle Cement, Lafarge Cement UK and CEMEX UK Cement) are the major domestic manufacturers of Portland Cement producing over 90% of the cement sold in the UK. Additionally, BCA supplies services concerning climate change issues to Quinn Cement.

2. Energy represents an increasing proportion of the variable costs of cement manufacture (> 35%) and it is therefore a primary concern of the industry to take all cost effective measures to improve energy efficiency and thereby reduce its emissions of carbon dioxide.

3. The cement industry supports the principle of emissions trading. Through their parent companies, Lafarge Cement UK, Castle Cement, and CEMEX are committed to carbon reductions through the World Business Council for Sustainable Development Cement Sustainability Initiative, (WBCSD CSI). In addition, Buxton Lime Industries has undertaken to adopt the commitments within the WBCSD CSI.

4. SPECIFIC INQUIRY QUESTIONS

4.1 *What are the key lessons to learn from Phase I of the Scheme?*

Phase I of the EU ETS presented a steep learning curve for both government and industry. The UK Emissions Trading Group[1] has been an important organisation in the coordination of views on policies and practices. The cement industry welcomes the involvement of government departments in the UK ETG.

Implementation of the EU ETS legislation demanded significant resources within companies but particularly within government departments. Consequently government employed a number of consultants in the development of the scheme. The outcome was that government has developed reliance upon consultants rather than developing internal capabilities. This may not bode well for future phases. The use of different consultants for the development of Phase II has added unnecessary complications and resource demands for industry.

In particular Phase I has highlighted the importance of the allocation methodology. Some operators in the UK are of the view that grandfathering and benchmarking when used together resulted in inequalities in the cement installation allocations. This view resulted in almost half of the installations, (equal to around half of the industry emissions) in the cement sector taking the opportunity to use the temporary exclusion option to be "opted out in Phase I".

Phase I has also highlighted some significant differences in the industries included in the scheme. The industries rest within two groups, those that can pass through the cost of carbon and those that cannot. Recent research by the Carbon Trust and Entec[2] confirms that the cement sector is one sector that cannot pass through cost of carbon and is consequently potentially impacted by imports and/or other allocation methods such as auctioning. Such sectors are also at risk of rising costs incurred from those industries that can pass through the cost to customers; this is particularly relevant when consideration is given to the expansion of the scheme after Phase I.

One of the industries that can pass through these costs is the electricity supply industry (ESI). As a result energy intensive industries take on twice the burden of the EU ETS, firstly directly for shortfalls in their own allowances and secondly indirectly due to the raised electricity prices enforced by the ESI as a result of the carbon cost pass through.

Importantly, developments in Phase I have recognised that the abatement potential in the cement sector is low, due to a long investment cycle. Experiences in Phase I have contributed significantly to the suspension of investment in the UK cement industry. The lack of certainty of the scheme going forward alongside the double regulation amplified by the climate change levy has led to announcements,[3, 4] deferring around £250 million of investment in two new cement facilities in the UK.

BCA believes that consideration should be made to removing the requirement of the UK Climate Change Levy from those installations covered by EU ETS. The Levy, as a domestic driver for energy efficiency, has now been replaced by the EU ETS as an international economic instrument. In accordance with "cost effective emissions reduction" the additional cost to the cement industry incurred by the levy could be used

[1] The ETG was formed in July 1999 by the CBI and the Advisory Committee on Business and the Environment (ACBE) to represent the UK business interest in greenhouse gas emissions trading. The ETG currently comprises over 80 subscribing Members—emitters, service providers and trade bodies and works closely with UK Government Departments in the field of climate change.

[2] The Carbon Trust. Analysis of EU ETS News Flow for an Investor Audience, Final Report June 2006.

[3] CEMEX UK Operations (14 March 2006) has announced that following the completion of a feasibility study, the company has suspended an application for planning permission for a new cement plant at Barrington, Cambridgeshire "due to uncertainty over the future of CO2 strategy in the UK".

[4] Lafarge Cement UK (21 May 2004) confirmed that it is delaying the development of its new cement works at Snodland in the Medway Valley.

to further our GHG reductions. The continued duplication of carbon reduction between the UK CCL and the EU ETS is contrary to the interests of "Better Regulation"—a concept espoused by both the Community and UK government.

With the development of the EU Emissions Trading Scheme there now is considerable overlap between policies that are designed to address the same issue of climate change. In the cement sector the CCAs promote the use of alternative fuels and this aspect of the climate change policy should be retained to ensure that the UK does not lose an important waste recovery outlet. However, with the introduction of EU ETS there is no longer any need, beyond Phase I of the EU ETS, for a cement sector climate change agreement. Also given the added complexity of double trading, the added compliance issues, the intricate verification issues and the huge burden on the technical management of industry during the first three months of the year, resulting from the overlapping issues for CCA-EUETS and Double Counting, there is little cost benefit from CCAs for EU ETS operators. The BCA would advocate the complete removal of the CCL and/ or CCAs for all EU ETS installations, thus removing duplicated effort by both operators and government and thereby helping to meet the objectives of better regulation. One of the most important aspects of any climate change policy review is the requirement to rationalise and harmonise the disparate elements of energy and climate change measures in order to provide a simple policy mixture to achieve carbon reductions. It should therefore be an imperative of the Committee to recommend the removal of the existing double regulation for industrial consumer's whilst at the same time providing efficiency and consumption reduction drivers.

Moreover there is a need to harmonise the approach in the UK with our continental European colleagues in order that a level playing field is ensured. To date, the European Commission has been ineffectual in its assessment of National Allocation Plans to ensure that all member states make a similar effort in relation to climate change.

4.2 *How likely is it that UK firms would successfully reduce emissions by at least 7MtC by 2012, in line with the proposed Phase II NAP?*

The Phase II UK National Allocation Plan has correctly placed the burden of reduction on the electricity supply industry since the ESI sector is rightly protected from international competition. Firms can however, purchase allowances on the market and consequently there is no guarantee that all of the reduction will take place in the UK. This highlights the importance that all countries involved in the EU ETS are committed to the same level of effort as the UK.

However, it does not follow that other non-ESI sectors will not be contributing in Phase II. The installation level National Allocation Plan for Phase II released on 21 August 2006 includes contributions from all sectors to a New Entrant Reserve for Combined Heat and Power (CHP). This means that there is a reduction on the "business as usual" emissions projections suggested in the March 2006 sector level NAP. CHP cannot be used in the cement sector and therefore it is inappropriate that the cement sector allocation is reduced to provide for technologies in other sectors.

The cement industry is committed to carbon reduction and in November 2005 announced its carbon strategy at the House of Commons as part of a far reaching sustainable development agenda. The investment cycle in the cement industry is long, typically 25–30 years and consequently the abatement potential during Phase II is low as recognised by Future Energy Solutions and Carbon Consortium[5] in their report on industrial sector emissions. Moreover, investment in the cement industry has been discouraged partly due to the uncertainty in the EU emissions trading scheme with decisions on two major investments having been postponed, as outlined in 4.1 above.

4.3 *What have been the effects of the method chosen for allocating allowances in Phase I?*

For Phase I eleven installations in the cement sector were subject to the grandfathering methodology and four subject to benchmarking methodology. Certain operators of installations in the sector were of the view that this resulted in allocations that did not reflect the efficiency of the technology employed and as a consequence there appear to have been competitive distortions created by the use of two differing methods. Those operators who were of the view that they were disadvantaged by the differing methods chose to take the opportunity to be temporarily excluded under Article 27 of the Directive. The seven "opt-out" installations accounted for around half of the cement industry carbon dioxide emissions during 2005. The outcome of such a high proportion of opted out installations gives the sector an appearance of over allocation for the 2005 results, but care must be taken when making judgements on a single year data. There are eight installations in the EU ETS cement sector for Phase I and four of these were undergoing extended commissioning/expansion during 2005. As such their emissions cannot be considered typical.

[5] Industrial Sector Carbon Dioxide—A report for the Department for Environment, Food and Rural Affairs.

4.4 *Has the Government identified the correct proportion of allowances to be auctioned in Phase II? Should these be drawn solely from the power sector's allocation? What will the effect of this auctioning be on industry and the price of carbon?*

The cement industry is highly sensitive to the auctioning of allowances due to the high proportion of CO_2 emissions per unit of profit and because cement is an internationally traded commodity. Auctioning does not provide government certainty if auctioned allowances are available to other member states that are perhaps at a different status in relation to their Kyoto targets.

If an emissions allowance auction is available to all participants in a scheme, including those in other countries then auctioning gives a national government less control over industrial development than other methods of emission allocation. Emission rights can be purchased by dominant carbon market players either within or outside of the national boundary. Although auctioning can be a revenue generator for government it does not on its own incentivise a shift toward more efficient technology, neither does it give signals to industry as to what level of efficiency or what type of technology should be employed. Auctioning will serve as just another tax on manufacturing as it does not, on its own, provide any technological incentive or benchmark to be achieved. On the contrary auctioning provides an incentive for importing products and closing UK production in a globally competitive market. Consequently auctioning should be used only for those sectors which are not under threat from imported material or have a very high profit to emission ratio.

4.5 *What have been the effects of Phase I so far on the competitiveness of (1) business in the UK, and (2) business across the EU?*

I. Unlike many other industries the UK cement manufacturing industry is able to highlight that around 90% of the cement consumed in the UK is manufactured in the UK. However, this domestic manufacture is increasingly under threat from imports by third parties ie companies not manufacturing in the UK. These third party imports have more than doubled over the latest four years for which statistics are available.[6] Adding to the pressure from imported material is the regulatory burden from a range of overlapping climate change legislation in the UK. The uncertainty of EU ETS Phase I preparations was partially responsible for discouraging the investment in the Lafarge plant in Medway which has been postponed for Phase I and Phase II. In addition the CEMEX plant replacement at Barrington has been postponed following the announcements of the EU ETS Phase II arrangements. These two investments would have totalled around £250 million. Additionally, the EU ETS has had a significant adverse impact on electricity prices. For energy intensive industries such as cement, this has resulted in a considerable rise in operating costs. This is compounded by the fact that the UK energy prices are generally higher than continental competitors.

II. It is too early to say what impact the 2005 EU ETS results have had on the European cement industry. However, the lack of harmonisation across the Phase I NAPs has led to an uneven playing field. Some countries are relying heavily on the delivery of credits from flexible mechanism projects. Whereas other member states appear to have been significantly over allocated. In those countries where allocations are "short" this leaves the potential for imported material to be supplied by near non-carbon constrained, countries. Alternatively since shipping transport costs are less then carbon costs, the EU cement market is increasingly under threat from cement manufacture in the Far East.

4.6 *What are the key issues for Phase II in terms of ensuring that emissions reductions from EU states are not cancelled out by the transferring of industry to developing economies?*

The displacement of manufacture from the UK and EU to non-carbon constrained economies is a real possibility but may be realised beyond Phase II. Not only does this displacement counteract EU climate change polices by transferring manufacture and emissions; it makes the problem worse by increasing the emissions from the transport of material. Phase II is likely to be too early to set up a global emissions trading system but it may not fall too soon to adopt a transitional measure such as border tax adjustment. Applying a border tax adjustment to products imported from outside of the EU cancels out the inequity of regulatory costs providing that the full cost of CO_2 is applied to the imports.

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

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

[6] Dti Statistics.

4.7 *How well are the EU ETS and the Clean Development Mechanism working together? What needs to be done to better integrate these markets? Is the CDM funding the right projects?*

The British Cement Association does not have direct experience of CDM projects at present because CDM project initiatives are generally handled by the international parent companies of the BCA members.

4.8 *How should aviation be included within the ETS? What are the latest indications of when it will be included?*

BCA believes that aviation should be excluded from the EU ETS. A report by Government consultants[7] concluded that the aviation sector could only meet any meaningful emissions targets by purchasing allowances or project credits. Only industries with the potential to abate their emissions within the lifespan of the second phase of EU ETS should be included.

It will be much too easy for the aviation industry to pass on the cost of carbon dioxide to their customers. Adding a few pounds to an airline ticket will not dissuade travellers or provide any incentive for the aviation industry to abate.

The transport sector (including aviation, shipping and domestic transport) should be subject to a separate emission trading scheme or other measures to influence their emissions. The transport industry differs significantly from manufacturing and all efforts should be made not to add further burden to manufacturing industry by "net purchasers" entering the scheme, pushing up the price of carbon and providing little or no abatement in their own sectors.

4.9 *The Environment Secretary has said: "we will support the Commission in its efforts to enforce tough caps". What exactly should the Government be doing to influence this?*

The UK has made a strong stance with the positions of the Phase I and Phase II NAP caps. The UK government should ensure that other member states are making equivalent effort in their National Allocation Plans so as not to disadvantage UK manufacturers and consumers.

4.10 *How well integrated are the ETS and other EU climate change policies?*

The implementation of ETS and climate change policies in the UK could be improved considerably. In the BCA response to the Davidson Review 2006,[8] BCA highlighted the "Double Banking"[9] of the Climate Change Agreements despite its provisions being largely duplicated through the EU Emissions trading Scheme. The aim of the EU ETS, to address climate change, is equivalent to the UK Climate Change Agreements whereas their delivery is not complimentary The Climate Change Levy, (CCL), which was introduced by UK Government in 2000, was based on improvements in energy efficiency as a way to deliver reductions in carbon emissions. The basis of the EU ETS is the reduction of carbon dioxide emissions. The development of the two different mechanisms for measuring, reporting and verification purposes has placed a significant burden on industry and has introduced the entirely avoidable issue of working out an equivalence between the two schemes, as well as the problems associated with the opt-out opportunities for UK businesses. UK government was aware that the EU ETS would be introduced in the short to medium term, yet continued to pursue its policy of introducing the CCA, then its own Emissions Trading Scheme, and now insists in trying to run them in parallel with each-other; it is the most clear cut example of over regulation of UK industry and has had a direct impact on its competitiveness. None of its EU competitors has had to negotiate its way through three separate and incompatible systems within a four year period, instead concentrating on the one EU wide scheme.

The mechanisms for avoiding double counting of emissions that are being put in place are a good example of the complex arrangements that have to be put in place as a result of totally unnecessary "double banking".

4.11 *What work needs to be done now to help design a third phase of the EU ETS? How can the experience of the EU ETS be used to help the design of a post-2012 Kyoto mechanism?*

Government and industry have both gained considerable experience during the design of Phase I & II of the EU ETS. Government should fully involve industry in the design of post 2012 mechanisms to ensure that the chosen mechanism is the most efficient for addressing climate change. The BCA has already begun thinking about post 2012 and has come to the following preliminary conclusions:

[7] DEFRA and DfT—Including Aviation into the EU ETS: Impact on EU allowance prices. Final Report.

[8] The Response Of The British Cement Association To The Davidson Review—May 2006.

[9] Double Banking. This can occur when European legislation covers the same ground as existing domestic legislation and where the two regimes have not been made fully consistent or mdrged into one.

(i) Allocation methodology

Grandfathering has been used extensively in Phase I and Phase II. In the post-2012 period grandfathering will be less desirable because any updating is likely to be influenced by the first two phases of the scheme and thus penalise early action. Although, the government plans to use a limited amount of auctioning in Phase II this should not be extended beyond Phase II. The cement industry is one of the most sensitive sectors to auctioning as an industry where there is a high emission to profit ratio. Consequently the result of auctioning allowances to the cement sector would encourage a greater amount of imported material.[10] Auctioning does nothing to provide an incentive to operate the best technology whereas benchmarking does this. Benchmarking sends the right signals to industry in so much as it sets the standard to be achieved. When benchmarking is used as a distribution method for a sector cap set by Government it also provides certainty for government's climate change targets. The most desirable benchmarking method should feature ex-post adjustment whereby an adjustment is made, following the compliance period, to rectify any distortions as a result of throughput. This adjustment may also be carried out within the boundaries of the sector cap but can give industry the comfort that growth may occur without undue penalty.

(ii) Harmonisation

The lack of harmonisation in Phase I has led to a number of undesirable outcomes within sectors, between sectors and between member states.

It is important to create a level playing field in order that markets are not distorted by emissions trading scheme policies. Globally the cement industry manufactures a relatively standardised product (clinker) which makes harmonisation relatively simple. It also makes sectoral agreements attractive in the cement sector. Important areas of harmonisation for the post 2012 period include:

— allocation method;

— monitoring and reporting, which needs to be simple and consistently implemented; and

— burden sharing, the amount of reduction should be harmonised and this should be considered in the revised Kyoto targets.

(iii) Work with industry not consultants

In developing climate change polices for the post 2012 period, government should involve industry at all stages. Although consultants have their uses they should not be used to replace expertise from within industrial sectors. Government should not over commit work to consultants at the expense of developing internal expertise.

(iv) Abatement potential

Reduction during manufacture

Significant carbon dioxide reductions have already been made in the UK cement sector,[11] therefore the sector reduction targets for the post 2012 period should be based on realistic abatement opportunities and technological potential. Carbon Capture and Storage (CCS) is potentially one option that is available to large CO_2 emitters. The potential of CCS in the cement industry is unproven and will require significant research, development funding and support to realise any potential. The post 2012 climate change policies should be designed in such a way as to incentivise the development of prospective technologies such as CCS in energy intensive sectors.

Reduction over the product life cycle

The post 2012 policies should not just focus on the manufacture of products. Rather they should acknowledge the whole life cycle of products through production, delivery and use. Cement and concrete products can significantly reduce the amount of energy required in buildings over their in-use life if high mass well designed buildings are constructed to utilise the thermal mass properties of concrete.

Independent research carried out by Arup Research and Development compared lightweight timber homes with medium weight and heavyweight masonry and concrete homes. Significantly, it found the latter can have the lowest total energy consumption and carbon dioxide emissions over their lifecycle.[12]

Additionally, concrete naturally carbonates and consequently takes up some of the carbon dioxide from the atmosphere that was emitted during cement and concrete production. Post 2012 policies need to recognise the whole life properties of products.

[10] Cement imports into Great Britain from non-UK manufacturers has doubled in four years and imports now stand at around 10% of cement consumed in the UK. Source Dti statistics.

[11] BCA Performance report can be downloaded at http://www.cementindustry.co.uk/main.asp?page=251

[12] A summary of the Arup report can be found at http://www.concretecentre.com/main.asp?page=1379

(v) Competitiveness

A number of studies have been published concerning the potential impact on competitiveness of the EU ETS.

"In general this evaluation shows that it would be difficult for the cement and lime sector to pass on the full opportunity cost of carbon. The ratio of the cost of carbon to the estimated profit is greater than one. The cost of carbon therefore is equivalent to, or greater than, the current profit margins on these products. Another way to express this is that if these sectors are unable to pass on the cost of carbon in their products then they would make more money by selling their allowances than from selling their products."[13]

One of the main issues is that carbon constrained economies are potentially under threat from non-carbon constrained economies for commodity products such as cement. One method to alleviate the potential impact of imported material is to use a Border Tax Adjustment or other initiatives; these can be used as an interim transitional measure to help promote global ETS.

What should the border tax adjustment be?

To promote local production for local consumption the border adjustment could be set at either: 1 tonne CO_2/t cement, or the worst CO_2/tonne for the EU plants. Either of these options would promote the local production of cement and thus avoid CO_2 being generated from additional transport.

A global ETS is the solution to most competitiveness problems concerning climate change policies. A global scheme will take time to establish and will raise the debate between countries as to whether targets should be relative or absolute and debate concerning the finer details of monitoring and reporting. As a transitional arrangement to a global scheme sectoral agreements could be used. There are a number of advantages to sectoral schemes that minimise competitiveness effects.

In order that the amount of effort is spread throughout society the burden share between industry, domestic, commercial and transport needs to be addressed. At present most of the early action has come from the industrial energy intensive sectors and in the design of a post 2012 scheme there should be recognition of this early action. Greater action is needed from non-intensive energy users, domestic consumers and the transport sector but in ways that do not impact further on domestic manufacturing.

(vi) Timing

Industry often comments that certainty is required from legislation so that plans can be put in place and business practice adjusted accordingly. In energy/CO_2 intensive industries the long term certainty of climate change policies is very important.

The BCA view is that the length of the emissions trading scheme and the commitment periods contained within the scheme should reflect the industries that are being targeting.

In the cement industry the investment cycle is around 25 years plus around seven years to design, build and commission a kiln. The BCA believes that an ETS commitment period should be not less than 15 years but ideally a 20 year period. The UK Mineral Planning Guidance (MPG10) states that kiln development on existing sites should provide 15 years raw material supply. For new kiln development MPG10 indicates that 25 year raw material reserves are needed before planning should be granted for new kiln developments,[14] Consequently there should be synergy between environmental policies.

Allocation periods for say a 20 year commitment period should be in five year blocks reviewed every fourth year and delivered annually into installation accounts.

In terms of lead time when designing a scheme for the post 2012 period the year 2010 is the latest date when companies need to know the trading scheme architecture and allocations for the post 2012 period.

[13] The Carbon Trust—Analysis of EU ETS, News Flow for an Investor Audience. Final Report June 2006 by Entec UK Limited.

[14] MPG10 paragraph 58. The size of the cement industry's landbank should be directly linked to the scale of capital investment envisaged at a site, for an important feature of the industry is the high cost of investment and the long amortisation periods this entails. Mineral planning authorities should normally aim to maintain cement plant with a stock of permitted reserves of at least 15 years. Where significant new investment (such as a new kiln) is agreed with the mineral planning authority, the plant should be provided with a stock of permitted reserves to provide for at least 25 years. New plant on a greenfield site should be provided with a stock of permitted reserves lasting more than 25 years.

(vii) Incumbent and New Entrant treatment

New entrants should be treated differently to incumbents. This is particularly relevant in terms of benchmarking methodologies and their use for both new entrants and incumbents. Different treatment of incumbents is especially needed in industries where investment cycles are long. This is because incumbents need to be given sufficient time to switch to the benchmark technology.

New entrant reserves for each sector should be funded by the same sector to avoid sectors being penalised for investments in other sectors, particularly competing sectors. New Entrant Reserves should be subject to ex-post adjustment. In Phase I and Phase II EU ETS the cement sector cap has been reduced to fund investment in other sectors such as CHP. The cement sector cannot use CHP and thus the penalty of reducing the cement sector cap is unreasonable.

(viii) Promotion of resource conservation

Post 2012 climate change policies could, if designed properly, promote resource conservation and contribute to UK waste management. Post 2012 climate change policies should encourage and incentivise the use of waste alternative fuels. The benefits of this are two fold. Firstly the replacement of traditional fossil fuels with waste derived fuels extends the life of finite natural resources. Secondly, valuable outlets for UK domestic, commercial and industrial wastes could be secured at a time when other routes, particularly landfill, are under significant pressure. The use of waste alternative fuels in the cement sector has other advantages. The cement industry is subject to extremely rigorous emission limits under the Waste Incineration Directive but more importantly the combustion heat is recovered in the process and no further waste is produced because the ash becomes integral to the cement product.

October 2006

Memorandum submitted by British Energy

KEY POINTS

— Government needs to set meaningful targets at the national and sector levels for the Emissions Trading Scheme (ETS); such targets should be developed through extensive consultation, particularly with industry because it is companies that will be required to deliver the emissions reductions sought.

— Based on the first year of the Scheme, the Business-as-Usual growth projections have led to over-allocation to nearly all sectors, the notable exception being the power sector. We need to ensure that all participants in the traded sector make genuine savings in subsequent Phases.

— Free allocation has led to criticism of the Scheme, particularly as it reduces the need for emissions reductions. A move towards full auctioning of allowances, perhaps in stages, would ensure the ETS incentivises the emissions reductions needed.

— It is too early to say what the implications for competitiveness are for two reasons: (a) any effect of the ETS during Phase 1 has been masked by high and volatile fossil fuel prices; and (b), the Scheme has only been running for just under two years which is not long enough to establish how companies are reacting.

— Those working on Clean Development Mechanism projects suggest that the ongoing uncertainty on the long-term role for the ETS and the associated carbon price, and limits on contribution by CDM projects, affect investor confidence in this part of the carbon market.

— Emissions from the aviation sector are growing markedly and there is a need, and desire, to address this issue. However, there are major problems associated with including this sector in the ETS and they will take time to resolve.

— The EU ETS is the right instrument to ensure reductions in, for example, sectors with significant point source greenhouse gas emissions—it is less effective at dealing with diffuse sources of emissions.

— It is crucially important that the ETS develops into one of the key EU "climate change" policy instruments for the long-term but this may require removal of some redundancy in the "policy space"; for example it is now appropriate that the Climate Change Levy in the UK be phased out since it tackles much the same issue.

— Confidence in the scheme will also grow if an international, post-Kyoto agreement is reached on emission reductions that involve as many countries as possible. As a minimum it is important the EU ETS remains not only as an effective vehicle for emissions reduction in the EU but also provides a vehicle whereby other countries are engaged through JI/CDM projects, or by linking to emerging trading schemes.

Response to Detailed Questions

Question 1: *What are the key lessons to learn from Phase I of the Scheme*

1. Government needs to set meaningful targets at the national and sector levels, developed through extensive consultation, particularly with industry because it is companies that will be required to deliver the emissions reductions sought.

2. The allocation methodology needs simplifying, and to better represent both prevailing operational practice and to be better able to address future operational practice.

3. Need to harmonise practice wherever possible across the EU, but taking care of the markedly different economic and energy industry structures of Members States (MSs).

4. The EC milestone dates for MS National Allocation Plans (NAPs) are negotiated at an early stage by officials—some MSs adhere to the timetable while others do not. Whereas some latitude is important, the EC response is not strong enough with those that ignore the deadlines set putting some countries at a disadvantage.

5. The release of commercially sensitive information must be better managed than it was at the end of the first year of Phase 1—the release of data once a year, as proposed, is the correct way to achieve this, balancing the needs of the market with the needs of the individual companies involved.

Question 2: *How likely is it that UK firms would successfully reduce emissions by at least 7MtC by 2012, in line with the proposed Phase II NAP?*

6. We believe that UK firms will meet their obligations as set out by the Phase 2 NAP. They may do this through their own actions, or by buying allowances on the carbon market, or through JI/CDM projects which are underway (although there is an installation limit on these at this time).

7. Companies will take the least-cost option when deciding how to meet their obligations and this will depend on a number of factors including:

- The carbon price in Phase 2 which will depend on the "scarcity" or otherwise of the market; the Commission will have a big influence on this as it scrutinises MS NAPs to ensure the Scheme fulfils its task of helping each MS meet its Kyoto target;
- Fossil fuel prices, and in particular the relative cost of coal to gas—a low gas price means a lower coal use, and carbon emissions than the business-as-usual (BaU) projections; this in turn means a lower demand for carbon and lower carbon prices;
- The degree to which BaU allocation to sectors other than the power sector lessens the pressure on them to reduce emissions;
- The prevailing climate and temperature which is increasingly being factored into company decision making.

Question 3: *What have been the effects of the method chosen for allocating allowances in Phase I?*

8. Based on the first year of the scheme, the BaU growth projections have led to over-allocation to nearly all sectors, the notable exception being the power sector.

9. Use of "grandfathering" has disadvantaged some within sectors—this is because the years used to establish the allocation tend not to be close to the more recent operational practice. A "benchmarking" approach, as adopted for the power sector in Phase 2 of the Scheme in the UK, provides a more equitable allocation method.

10. Free allocation has led to criticism of the scheme, particularly as it reduces the need for emission reductions. A move towards full auctioning of allowances, perhaps in stages, would allow the mechanism to function correctly ie to incentivise emissions reductions.

Question 4: *Has the Government identified the correct proportion of allowances to be auctioned in Phase II? Should these be drawn solely from the power sector's allocation? What will the effect of this auctioning be on industry and the price of carbon?*

11. The proportion of allowances auctioned was constrained to 10% by the Directive for Phase 2. The Government was right to identify auctioning as the long term-direction for the scheme and the 7% minimum level of auctioning adopted for Phase 2 is a good first step and will provide much valuable experience.

12. Auctioning should be adopted by all sectors to create the focus for emission reductions. There will be little management focus on emissions reductions when companies receive BaU allocations for free.

13. The price of carbon depends on the supply and demand for allowances in The European market. Although timing of the auction is important, the long-term run of the cost of carbon will be determined by the overall scarcity of carbon allowances in the market place.

Question 5: *What have been the effects of Phase I so far on the competitiveness of (1) business in the UK, and (2) business across the EU?*

14. It is too early to say for two reasons: (a) any effect of the ETS during Phase 1 has been masked by high and volatile fossil fuel prices; and (b) the scheme has only been running for just under two years and with the exception of the end of year carbon data, there is little transparency on how the scheme is affecting companies and their activities.

15. It is hard to argue that competitiveness is harmed in the UK or the EU given the free allocation of allowances, a surplus of allowances in the market through a generous allocation methodology, and the ready availability of a measure of relatively cheap allowances through JI and, in particular, a large number of CDM projects.

Question 6: *What are the key issues for Phase II in terms of ensuring that emissions reductions from EU states are not cancelled out by the transferring of industry to developing economies?*

16. There is little evidence to suggest that the level of caps being set in MS NAPs for Phase 2 will force companies to locate outside of the EU. The UK has taken the precautionary step of allocating allowances at BAU levels to nearly all industrial sectors, with the exception of the power sector, to maintain their competitiveness.

Question 7: *How well are the EU ETS and the Clean Development Mechanism working together? What needs to be done to better integrate these markets? Is the CDM funding the right projects?*

17. It is too early to comment. There were some initial difficulties with CDM Executive Board but this has not stopped considerable interest in developing CDM projects in a number of countries. The percentage contribution as set out in the Directive encourages CDM projects; in the UK this has been translated to an 8% limit on allowances from this source for installations during Phase 2.

18. Those working on CDM projects suggest that ongoing uncertainty on the long-term role for the ETS and the associated implications for the carbon price, along with limits on contribution by CDM projects, affects investor confidence in this part of the carbon market.

19. It is natural that the least-cost CDM projects will be carried out first and these may well involve greenhouse gases of high Global Warming Potentials such as the hydrofluorocarbons and methane rather than carbon. In time, and with the confidence of a well-functioning ETS, mainstream carbon reduction projects should be developed.

Question 8: *How should aviation be included within the ETS? What are the latest indications of when it will be included?*

20. Emissions from the aviation sector are growing markedly and there is a need, and desire, to address this issue. However, there are major problems associated with including this sector in the ETS—these need to be resolves but will take time.

21. Since it is unlikely this sector will enter the Scheme from the beginning of Phase 2—and in fact it may not be until about 2010—it may be better to introduce this sector in Phase 3, thus avoiding the disruption of, and uncertainty in the market it may cause.

Question 9: *The Environment Secretary has said:* "we will support the Commission in its efforts to enforce tough caps". *What exactly should the Government be doing to influence this?*

22. The Government must show that it is "leading by example" and we commend government for setting a meaningful carbon reduction target beyond its Kyoto obligations, and by setting its ETS caps in Phase 1 and 2 consistent with this.

23. On the basis of a good record in this area, the Government needs to support the EC in its endeavours to ensure other MS produce caps consistent with, at the least, their Kyoto targets.

24. UK should continue to take a lead role in this area and make a significant contribution to establishing a long-term framework for the Scheme with milestone carbon reduction targets beyond Kyoto an important part of the process.

Question 10: *How well integrated are the ETS and other EU climate change policies?*

25. The ETS is the latest and arguably the policy instrument best able to deliver emissions reductions on the scale needed, at least in some of prominent sectors. This means that it is occupying another part of the climate change "policy space" although there is some overlap with other policies.

26. The obvious overlap is in the renewables area. The EC accepts that this sector is heavily subsidised in MS to help develop the industry. But fuel switching from high carbon intensity to low and near-zero carbon intensive technologies is also the result of a well functioning ETS—there is a danger then of providing a "double benefit" for renewables (which in the UK means equates to wind power at this time) and this discriminates against other near-zero emission options.

27. It is crucially important that the ETS develops into one of the key EU "climate change" policy instruments for the long-term but this may require removal of some redundancy in the policy space; for example it is now appropriate that the Climate Change Levy in the UK be phased out since it tackles the same issue.

Question 11: *What work needs to be done now to help design a third phase of the EU ETS? How can the experience of the EU ETS be used to help the design of a post-2012 Kyoto mechanism?*

28. The most important first step towards a post-Kyoto, Phase 3 of the EU ETS is a concerted effort at MS and EU level confirming the Scheme will continue for the long-term, thus providing industry with a measure of certainty needed for its investments.

29. The EC's Review of the Scheme will be extremely important in building confidence particularly if some of the inequities in the Scheme are removed and the way forward is made clear to the traded sector.

30. Confidence in the scheme will also grow if an international, post-Kyoto agreement is reached on emission reductions that involve as many countries as possible. As a minimum it is important the EU ETS remains not only as an effective vehicle for emissions reduction in the EU but also provides a vehicle whereby other countries are engaged through JI/CDM projects, or by linking to emerging trading schemes.

October 2006

Memorandum submitted by the CBI

The CBI continues to support emissions trading as a potentially flexible means of achieving emissions reductions from the energy and industrial sectors in the future, and welcomes the opportunity to submit evidence to the Environmental Audit Committee inquiry into the EU Emissions Trading Scheme (EU ETS).

Going forward, one of the key issues that needs to be addressed is the impact of the EU ETS on UK and EU business competitiveness. Unless this is achieved, it is hard to see how the credibility of the scheme can be built on the international stage to encourage uptake of similar trading mechanisms globally post-2012.

Our response focuses on the key aspect of business competitiveness, as well as other key design issues for future phase of the EU ETS. This is followed by some specific insights into some of the key issues on which the Committee has invited comment.

UK and EU Business Competitiveness

The EU ETS impacts on the competitiveness of UK and EU business both directly, in terms of the costs associated with implementing and complying with the scheme, and indirectly, through increases in electricity prices. To reduce the impacts of the EU ETS on internationally-competitive sectors, Government should work with key EU partners to secure agreement on the following areas:

- *Harmonisation:* To avoid competitive distortions in the EU single market, there is a need for greater harmonisation of interpretation and implementation of the EU Emissions Trading Directive in future phases. Key elements that could benefit from greater harmonisation include setting of the overall cap, allocation methodologies/rules, the definition of combustion plant, rules on new entrants and closures and treatment of small emitters.
- *Allocation methodology:* Allocate to manufacturing sectors on a business-as-usual basis, including full allocation for process CO_2 emissions (all process emissions are irreducible and, therefore, treating them as reducible will impose cost burdens on industry).
- *Avoid artificial limits on use of credits from flexible mechanisms:* The approach by the Commission to-date has been to restrict interaction between the EU ETS and the Kyoto flexible mechanisms, by placing a requirement on member states to set limits on the use of Joint Implementation (JI) and Clean Development Mechanism (CDM) credits in the EU ETS. We are concerned about this approach and, in particular, the UK Government's interpretation of the requirement—the UK's 8% limit on the use of JI/CDM credits is one of the strictest amongst the member states (compared with 10% in France/Italy, 12% in Germany, 20% in Sweden and 50% in Spain/Ireland). An artificial

limit on the use of JI/CDM credits aims to steer the price of carbon within the scheme, arguably acting against the purpose of the scheme—that is to allow the free market to function and for companies to identify and develop the most cost-effective means to reduce emissions. This will reduce the supply of credits available to European companies and artificially raise the price of carbon and hence cost of compliance, while doing little to encourage technology transfer to and emissions reductions in developing countries.

While these measures will assist to reduce the cost to internationally competitive industries and intra-EU competitive distortions, without a global regime to tackle climate change, there is an impact on electricity prices which will be borne disproportionately by the UK and EU manufacturing sector. Looking forward, there are a range of possible approaches to minimise the competitiveness impacts on industrial sectors, including:

— *Maximise interoperability with international carbon markets:* The EU ETS needs to be kept flexible so that it will be able to link to other trading schemes as they develop in order to encourage the uptake of carbon trading internationally and to improve the liquidity of the market. This will help to level out carbon prices internationally and optimise overall allocation of resources.

— *Explore the opportunity for EU-wide and international sectoral agreements:* Aim to ensure that major competing producers of specific internationally traded products embody a similar carbon cost.

— *Explore border tax adjustments:* For example, to reimburse companies for direct carbon costs incurred on exported products and establish a directly equivalent charge on imports on a non-discriminatory basis.

Role of Auctioning

While there are differing views within the CBI on the role of auctioning in allocating allowances, the weight of membership opinion is against auctioning of allowances because:

— it will add to the costs of UK (and EU) manufacturing, further reducing operators competitiveness internationally—a move toward full auctioning on an EU-only basis will place UK operators exposed to international competition at a competitive disadvantage relative to global competitors (who are not required to internalise the cost of carbon);

— even if auctioning is limited to the power sector, this could serve to put upward pressure on already high power prices; and

— implementation in the UK should not be out of step with other member states as this would serve to increase competitive distortions—Sweden, Germany an Finland have already declared that they will not be auctioning any allowances in Phase II.

For future phases, benchmarking has great favour amongst energy intensive industries because it is based on efficiency and has a direct link to technology development. Furthermore, if linked to the investment cycle it does not impede competitiveness.

Long Term Certainty

To encourage investment in low carbon technology/generation, business needs greater certainty that there will be a market for carbon in the future. Setting NAPs for longer periods of say 15–20 years would help to generate this certainty, but presupposes knowledge now of how the EU ETS and international climate change negotiations will develop post-2012, while reducing UK flexibility to take account of these international and European developments in its allocations.

On balance therefore, the CBI would be looking for Government to:

— confirm that carbon trading will exist post-2012 as the core measure for pricing carbon and achieving emissions reductions in the power generation and industrial sectors;

— clarify as far as possible the scale of effort that will be required, including the balance between trading and non-trading sectors and the rules or principles that will underpin future allocations so that companies better understand what the system is driving towards in the longer term; and

— set out how it aims to work with EU partner countries (in particular, key economic partners and emitters such as Germany, France, Poland) to build consensus of the rules and principles underpinning the EU ETS beyond 2012.

Scheme Simplification

The administrative costs of the scheme can represent a significant burden to participating companies, in particular for small emitters:

— *Small emitters:* The monitoring, reporting and verification requirements of the EU ETS cause significant financial and administrative burdens that are often disproportionate to the low level of actual emissions caused by small emitters. Exclusion of small emitters on the basis of an EU-defined de minimis threshold will reduce the costs of compliance for business, without significantly reducing the environmental benefit of the scheme.

— *Larger emitters:* The complex processes associated with verification and rule changes between phases increases the costs of administration to all participants in the scheme. Stability of the rules into the longer term will enable companies to develop automated systems to reduce these costs.

Specific Questions

1. *How likely is it that UK firms would successfully reduce emissions by at least 7MtC by 2012, in line with the proposed Phase II NAP?*

Under the Phase II NAP, there is a requirement on the electricity generation sector to reduce its emissions by 7MtC that is both mandatory and binding.

However, it is important to remember that the EU ETS is not designed to specifically achieve UK emissions reductions, but rather to encourage the most cost-effective emissions reduction. UK generators can achieve their targets through physical emissions reductions in the UK, purchasing of allowances in the EU carbon market, or purchasing JI/CDM credits. Theoretically, the EU ETS should encourage them to find the cheapest reductions.

The ETS should not be judged, therefore, in terms of whether emissions reductions are domestic or not. Rather there is a need to reconcile the aims of the EU ETS with the objectives of the UK Climate Change Programme.

2. *What have been the effects of the method chosen for allocating allowances in Phase I?*

The first year reconciliation results have raised concerns about surpluses of allowances (some 44 million tonnes across the EU) in the scheme.

We agree that the results from the first year reconciliation of emissions against allocations are significant in that they provide the first real data for the scheme. Furthermore, the results bear out CBI concerns that while the UK has been rigorous in setting a tight allocation at the aggregate level, most other member states have over-allocated allowances. As a consequence, we would like to see more effective scrutiny and revision of member state NAPs by the Commission in Phase II to bring about more consistent implementation. The UK government can play a key role in keeping pressure on the Commission by analysing member state NAPs and identifying/questioning any weaknesses.

However, we would also caution against over-emphasising the first year results. The first year results represent a snapshot of events to-date and there are many factors which may affect the position of individual companies or sectors. For example, the iron and steel sector turned down production in 2005 in response to a world-wide glut. Other UK manufacturers turned down production in response to high energy prices. For example, manufacturers of chlorine and ammonia-based fertilizer reduced production over the winter, while a number of glass and paper manufacturers have been cited as closing down plant in response to rising gas and electricity prices.

3. *How well integrated are the ETS and other EU climate change policies?*

Over time, the CBI expect the ETS to become the central mechanism for incentivising investment in low carbon technologies and activities. As a consequence, there is a need to keep under the review the relationship between other EU climate change policies, such as renewables and energy tax policy, and emissions trading.

This is already evident in the UK, where industrial emissions are targeted by a range of policy, regulatory and tax measures (Integrated Pollution Prevention and Control regulations (IPPC), CCL and Climate Change Agreements (CCA), EU ETS) leading to double regulation, environmental anomalies and additional paperwork where verification procedures differ. The CBI has repeatedly called for streamlining of the measures. We continue to favour a move over time toward using emissions trading as the main route for delivery of industrial carbon reductions. However, to reduce overlaps, the 500 installations covered by the EU ETS should, at a minimum, get access to the 80% discount from the CCL without a requirement of compliance with both the CCAs and the EU ETS.

October 2006

Memorandum submitted by Centrica plc

1. *What are the key lessons to learn from Phase I of the Scheme?*

Centrica views the EU ETS as a cornerstone policy in the UK Government's climate change programme, and believes that a cap-and-trade carbon trading mechanism has a major role to play in meeting UK domestic and international targets in this regard. In the absence of any significant credible alternative mechanisms for reducing emissions from intensive energy users, the EU ETS should also be viewed as a cornerstone policy for other Member States. It is therefore significant to the credibility of the EU's Kyoto commitments (and beyond) on the broader international stage.

Whilst we consider that Phase I can be significantly improved to make the scheme work more effectively, it is important to remember that the early years of the scheme were intended to be a learning process. We view key lessons learnt from Phase I to include the importance of tight caps across all nation states, the drawback of free allocation of allowances, the importance of harmonisation across EU member states, the need for long-term visibility of the scheme post-2012, and the role played in linking the scheme to a global network or emission reductions via project credits.

These issues are considered further in the following responses.

2. *How likely is it that UK firms would successfully reduce emissions by at least 7MtC by 2012, in line with the proposed Phase II NAP?*

The UK projections for Phase II are now 267mt carbon which represents a cut in emissions from a business as usual scenario of around 8mt carbon, or 29mt CO2. Within this cut, however, different sectors have been allocated a disproportionate burden, with the bulk of the cuts focusing on the power generation sector.

There is a requirement to replace 12GW of opted-out coal stations by 2015 and increasing UK electricity demand will lead to further requirements for new generation. In this relatively short-time scale, regardless of other pros and cons, nuclear can not deliver. Replacing this lost capacity with clean modern CCGTs is therefore a desirable step that will lead to reductions in carbon emissions.

In order for significant new CCGT capacity to be brought on stream within the required timescale, however, investors need appropriate long-term signals for the value of carbon so that they can take account of the value of carbon in investment decisions. There is currently no visibility of the scheme or clarity over carbon prices beyond 2012. Investments in low-carbon technology have time horizons of many years and defining the framework for EU ETS post 2012 is paramount to allow delivery of low-carbon investments.

3. *What have been the effects of the method chosen for allocating allowances in Phase I?*

We strongly support benchmarking allocation methodology for allocating allowances to the power generation sector. As an allocation methodology grandfathering rewards high polluting installations, particularly in the power generation sector where the cost of carbon is embedded into the wholesale power price received by generators.

Moving away from the grandfathering approach used in Phase I to a benchmark allocation methodology is important to ensure an equitable allocation across this sector based on future performance with respect to best-in-class rather than historic emissions. We see this as an essential step in encouraging low carbon behaviour in the sector.

In phase I, installation-level allocations were largely based upon emissions data from a historical baseline period, ie 1998–2003 emissions. Without prior knowledge of the scheme and its allocation methodology, this approach offered Government a comparatively simple and effective way of allocating the sector cap between installations. However, if in Phase II the Government had chosen to update this baseline, for example to 2000–05, prior knowledge may have meant that installations increase their emissions now in order to lock in a more favourable allocation for the forthcoming five year phase.

Whilst this would make economic sense, it is clearly a perverse incentive of a scheme designed to reduce emissions. This is exacerbated by the fact that phase II allocation decisions will remain for the five-year period and that prices are likely to be higher given that the shortfall placed on industry is expected to increase. We therefore support the use of benchmarking for allocations in the power generation sector for Phase II, and the use of a single benchmark for new entrants to this sector which reflects best in class technology. Looking beyond Phase II, we believe there should be no free allowances allocated to the power generation sector, with much greater use made of auctioning.

4. *Has the Government identified the correct proportion of allowances to be auctioned in Phase II? Should these be drawn solely from the power sector's allocation? What will the effect of this auctioning be on industry and the price of carbon?*

Centrica strongly believes that the existing level of free allocation of allowances under the EU ETS scheme is a fundamental flaw, particularly to those sectors which recover the full opportunity cost of these allowances from their customers, due to the absence of competitors who are not subject to similar emissions reduction measures. This is demonstrably the case in the UK power generation sector, where the cost of carbon is fully factored into the wholesale power price. Centrica therefore would support full use of auctioning to the maximum 10% allowed in Phase II, and going forwards believes the goal should be to ultimately eliminate free allocation of allowances.

In the absence of international competition, and therefore unlike other sectors, generators will not operate unless they can recoup the total value of the generating components which now includes the market value of allowances, despite the allowances being given out for free. The value of carbon is therefore factored into investment and operational decision-making, and the cost of generating electricity has risen to reflect the EU ETS' opportunity cost on the marginal fuel. All generators face this opportunity cost, and as such there is limited competitive pressure to prevent this cost being passed-though to wholesale buyers.

We do however recognise that some other sectors may need some protection, particularly where their competitors are not faced with similar emission reduction targets to those in the EU ETS.

There is an argument made by some, noticeably coal generators, that the level at which the price of carbon is factored into the wholesale power price is not sufficient to cover their costs. This is on the basis that when gas is the marginal generating fuel, power prices will only incorporate cost of carbon at the intensity reflective of a gas plant, which is lower than that of a coal station. However, it should be noted that an efficient EU ETS with a shortage of allowances across the EU would encourage fuel switching with the result that coal would become the marginal generating fuel. In these circumstances we would expect the wholesale power price to incorporate fully the cost of carbon to a coal generating plant.

Consequently we welcome recent steps to reduce the level of free allocation in the electricity supply industry, by focusing the cut in allowances on this sector and by introducing some use of auctioning. We are disappointed that full use is not being made of the scope to auction 10% of allowances in Phase II and have urged government to be bolder in its approach to Phase III in this regard. Centrica would ideally like to see an increase in the proportion of auctioning in Phase II to the maximum 10% allowed, and for the UK Government to press the EU to remove the restriction on the total level of auctioning allowed for subsequent phases.

We are also supportive of the decision that auctioned allowances will be drawn from the allocation for the power generation sector, for the reasons outlines above. Given that the cost of carbon is already embedded into the wholesale power price, and the fact that industry will receive allowances for 100% of projected emissions, the effect of auctioning on industry other than power generation will be negligible. There will also be no effect on the cost of carbon due to some allowances being auctioned rather than allocated for free. The value and therefore cost of carbon is determined by the wider supply/demand balance of allowances across the EU ETS. Whether these allowances have been allocated for free, or paid for does not change the total amount of allowances available, and as such the cost of allowances will be unaffected by the allocation methodology.

5. *What have been the effects of Phase I so far on the competitiveness of (1) business in the UK, and (2) business across the EU?*

The introduction of the EU ETS has resulted in giving a value to the emitting of carbon within the EU. There is little evidence as to the direct effect on competitiveness of businesses from the EU ETS, though it should be recognised that some sectors do face significant competition from outside the EU where their competitors are not subject to similar emission constraints. These sectors however were allocated more free allowances in 2005 than were required to cover their emission levels, and as such faced no direct effect on their cost of operation or competitiveness. There have been suggestions that an indirect effect has arisen due to the increase in power prices caused by the EU ETS, though it should be noted that:

(i) Not all Member States have seen an increase in power prices because of EU ETS due to the lack of a fully functioning, deregulated electricity market;

(ii) Even where the cost of carbon has fed through into the wholesale power price, the effect is much smaller than that arising from increased gas prices.

6. *How well are the EU ETS and the Clean Development Mechanism working together? What needs to be done to better integrate these markets? Is the CDM funding the right projects?*

Directly linking the EU ETS with other emission schemes outside of the EU will help to deliver emission reductions at the lowest cost to the global economy, and would aid development of a more liquid market. However, in the absence of such direct linkage, this can be achieved by minimal restrictions on the use of project credits from CDM and JI. Using project credits as linking mechanisms in this way will help to ensure that the EU ETS is not operating in a vacuum from other schemes.

Centrica is therefore concerned about the tight restrictions which have been placed on the use of project credits, which we believe are a vital step towards global engagement in reducing carbon emissions. Projects developed under the Clean Development Mechanism deliver real and enduring carbon emission reductions in developing countries which currently do not have any emission reduction targets and, in the absence of legally binding targets, open a pathway to Kyoto for many developing countries.

There is also substantial potential for technology transfer from these projects to other countries whether directly covered by the EU ETS or not. Allowing the use of credits for compliance under the EU ETS supports these project streams, supports innovation in UK business, and allows reductions to be made at lowest cost—the whole point of the scheme. Imposing low limits on the use of credits within the UK damages the ability of UK companies to invest in emission-reducing projects in the developing world, and might check the development of this important new market.

Centrica would like to see a relaxation on the proposed restrictions on the use of project credits from CDM and JI of 19.5mt CO_2 under Phase II proposals, and certainly a significant relaxation under Phase III.

To protect the competitiveness of UK plc, if restrictions are to be put in place it is important that they are set at levels that are no less than other member states. The UK limit of 8% is very much at the lower end of the published range. Ireland and Spain, for example, have set a 50% limit, and we believe that the low UK limit will harm the competitiveness of UK companies as it restricts their ability to participate in the wider global carbon market.

Furthermore, use of project credits under a restricted scheme should be targeted on those sectors being asked to make cuts, rather than spread across all participants in the scheme equally. We note that the Flemish government in Belgium, for example, has allocated a different limit to power generators (24%) and other industry (7%) due to the larger cut in allocations versus requirement in the power generation sector.

Centrica believes it is important that the CDM is funding projects that deliver real and enduring emission reductions, and that the UN appointed CDM Executive Board ensuring this is the case with their detailed analysis of submitted projects.

8. *How should aviation be included within the ETS? What are the latest indications of when it will be included?*

The current scheme only accounts for CO_2 at present and covers approximately 45% of expected 2010 CO_2 emissions; significant emitting sectors not currently covered by the Scheme include aviation, surface transport and domestic emissions.

We believe that currently excluded sectors, especially surface transport and aviation, should face the same or similar carbon reduction incentives to those applicable in energy-intensive industries. These sectors are responsible for significant and growing levels of carbon emissions and any scheme whose aim is to introduce real reductions needs to address whether these sectors can be incorporated into the scheme without compromising its operation, or whether other policy instruments are appropriate for these sectors. It is vitally important, however, that any decision to expand the scheme to other sectors or gases must ensure that the level of allowances available as a result of this expansion is robustly determined such that the over-allocation seen in the first year of Phase I is not repeated. One way of doing this would be to run a "shadow" scheme for expansion sectors for a year, operating along similar lines to the main EU ETS before these sectors are included in the wider scheme.

9. *The Environment Secretary has said: "we will support the Commission in its efforts to enforce tough caps". What exactly should the Government be doing to influence this?*

Tight caps across Member States in Phase II and beyond are clearly vital to delivering the required carbon emission reductions and to protect the integrity of the scheme. The need for this was demonstrated in May 2005 when it became clear many nations had allocated more allowances than were required and the price of carbon dropped from €30/t to about €10/t.

It is worth emphasising that the EU ETS will have to play a large role in all Member States' carbon reduction programmes and meeting of Kyoto targets. The integrity of the scheme is synonymous with the credibility of the EU on the international stage in this regard. This is particularly important as a successful EU ETS can be a blueprint for wider global schemes which will be crucial in delivering the levels of international emission reductions required to reduce the global effects of climate change.

Early signals from many other countries on the basis of their proposed Phase II NAPs are worrying and there is evidence that without amendment to individual country caps the EU ETS cannot be relied on to meet EU Kyoto targets.

The Government needs to continue to press for tight caps across Europe as a matter of urgency. Individual Member State's caps must be consistent with achieving real carbon emission reductions at least in line with Kyoto commitments where they exist. The EU Commission should be encouraged to carry out robust assessments of National Allocation Plans to ensure EU Kyoto commitments are on target.

In the UK, the cap on allowances should be in line with the drive towards the current 2050 emissions target, regardless of the caps set elsewhere. The UK has shown strong leadership in this area to date, and should continue doing so whilst working with other Member States to encourage them to do the same.

We believe that a commitment to a low-carbon future, shown through tight NAPs and other emission-reduction policies, can create significant economic opportunities for the UK and EU, by giving a first-mover advantage in new global markets for low-carbon technology.

10. *How well integrated are the ETS and other EU climate change policies?*

For the UK, and indeed the EU, to maintain and progress its emissions strategy, there must be strong political will to move towards global participation in the coming years. Phase I of the EU ETS has already demonstrated to the EU the difficulties of going it alone, i.e. the need for free allocation in order to protect internationally competitive industries. It goes without saying that it is entirely unrealistic to expect EU industry to deliver the much-needed emissions savings, whilst countries such as the United States and Australia ignore the climate change problem and continue to expand their economies at the expense of the EU.

11. *What work needs to be done now to help design a third phase of the EU ETS? How can the experience of the EU ETS be used to help the design of a post-2012 Kyoto mechanism?*

In our view, the most fundamental issue to be addressed is the future security of the scheme, something which was borne out by Defra's recent publication of the summary of responses by stakeholders to the EU ETS review questionnaire.

EU ETS is now a significant consideration in any company's decision to invest in new power generation. By 2015 there will be a requirement to replace 12GW of opted-out coal stations and increasing UK electricity demand will lead to further requirements for new generation. In this relatively short-time scale, regardless of other pros and cons, nuclear can not deliver. Replacing this lost capacity with clean modern CCGTs is therefore a desirable step that will lead to reductions in carbon emissions.

Whilst we believe that generators will seek a diversity of capacity technology at some level in order to provide a balanced portfolio, in order for significant new CCGT capacity to be brought on stream within the required timescale, investors need appropriate long-term signals for the value of carbon. There is currently no visibility of the scheme or clarity over carbon prices beyond 2012. Investments in low-carbon technology have time horizons of many years and defining EU ETS post 2012 is paramount to allow delivery of low-carbon investments.

The UK Government should continue to strive for early EU agreement on the continuation of the scheme post 2012. Should it prove impossible to reach the necessary international agreement on Phase III at an early stage, however, then we would favour unilateral action by the UK government to replicate on an interim basis the expected effect of ETS Phase III.

A number of ways have been suggested as to how this could be done. As a firm believer in market mechanisms, Centrica's strong preference is for an EU-style UK ETS. This would allow the government to set a framework and ensure a structural shortfall via a NAP, whilst the market would decide the price of carbon.

We are not in favour of the more interventionist tools, such as carbon contracts, believing these will be far less efficient in providing carbon support without distortive effects. Carbon contracts would leave the decision on the price of carbon to government which would be set at the beginning of the scheme with no room for amendment as circumstances changed. We believe that this would mean the government making judgements on risk that we think commercial participants are better placed to assess and manage.

Any UK scheme should be designed such that if international agreement were subsequently forthcoming, the UK scheme would then be replaced by a wider EU or global ETS. A UK ETS scheme could easily do this.

We believe that it is worth giving some early consideration to how EU ETS post 2012 could interact in an innovative way with other fiscal policies around carbon emission reductions, and where possible harmonise their approach.

One example could be the Energy Efficiency Commitment, where allowing trading of "excess" measures into the EU ETS as a wider carbon trading market, would provide commercial incentives for energy suppliers to take full advantage of different carbon reduction opportunities across a range of sectors.

It would also provide an incentive for energy suppliers to go beyond obligated targets inherent "stop-start" cycle as one EEC programme ends and another one begins. This would help to provide sustained growth within the UK energy efficiency sector, and offer longer-term benefits to all UK consumers.

October 2006

Memorandum submitted by The Confederation of UK Coal Producers (CoalPro)

The Confederation of UK Coal Producers (CoalPro) represents member companies who produce over 90% of UK coal output. CoalPro thanks the EAC for the opportunity to provide views on the prospects for the remainder of Phase I and the lessons that should be applied to Phase II.

This response, first, addresses the specific issues on which the committee would welcome comment, where appropriate, but then sets out certain other issues which CoalPro believes the Committee should consider, particularly in relation to Phase II.

A. CoalPro's Comments on the Specific Issues are as Follows

1. *What are the key lessons to learn from Phase I of the Scheme?*

A liberal supply of allowances will do nothing to reduce carbon emissions or stimulate investment in higher efficiency plant. More particularly, a disproportionate distribution of allowances in individual member states will merely result in business meeting their needs by purchasing allowances from companies in other member states. Because the UK is one of very few member states where the issue of allowances has been less than need, this has done nothing to reduce emissions in the UK or elsewhere but will result in a transfer of resources in Phase I amounting to several hundreds of millions of pounds out of the UK. This is a perverse outcome and illustrates the pointlessness of the UK adopting a "hair shirt" approach on its own.

2. *How likely is it that UK firms would successfully reduce emissions by at least 7MtC by 2012, in line with the proposed Phase II NAP?*

UK firms may well reduce carbon emissions by 7MtC by 2012, but that does not mean to say that carbon emissions will be lower than either the 245 million allowances for Phase I or the 238 million allowances for Phase II. If there continues to be a liberal supply of allowances across Europe, they will merely purchase what they need. Indeed, the electricity generation sector may have no alternative but to do so if the lights are to stay on.

3. *What have been the effects of the method chosen for allocating allowances in Phase I?*

Because every sector other than the electricity generating sector has been given the allowances they need, there has been no incentive to invest in lower carbon processes. The generating sector is short of allowances and has purchased/is purchasing their needs from elsewhere. The only alternative to this is a massive switch to gas, with all the other problems and issues that that raises, or to allow the lights to go out. At no time was this more clearly demonstrated than last winter. Because of a shortage of gas, and because gas was very much more expensive than coal, coal burn increased by 20% compared with the previous winter with the coal-fired power stations providing 50% of electricity demand. The consequence will have been a significant increase in carbon emission with the generators complying with the Scheme by means of a large-scale purchase of allowances involving a huge transfer of resources to companies in other Member States. It is no use moralising about this; the only alternative would have been to allow the lights to go out in every morning and evening peak demand period on every cold day last winter.

4. *Has the Government identified the correct proportion of allowances to be auctioned in Phase II? Should these be drawn solely from the power sector's allocation? What will the effect of this auctioning be on industry and the price of carbon?*

Whilst the approach to be adopted by other Member States is not yet clear, it would appear that the Government has set a relatively high percentage of allowances to be auctioned. UK industry generally will be disadvantaged by this approach. It is quite wrong for the allowances to be auctioned to be drawn solely from the power sector but this merely masks the much bigger question of the correct overall allocation of allowances. Other sectors will be given what they need. Only the power sector will be short. Depending upon the overall approach adopted by other Member States, this will lead to a continuation of the situation under Phase I with a major transfer of resources from the UK to companies elsewhere in the EU and/or a large-scale switch to gas with all the issues and problems that raises, including the potential for much higher gas and electricity prices than would otherwise be the case. The effect on industry other than the power sector

will be minimal because it has been allocated the allowances that it needs. Other things being equal, however, the price of carbon will be higher than it would otherwise have been, leading in turn to higher gas and electricity prices.

The issue the Committee needs to consider is not whether the allowances to be auctioned should be drawn from the power sector, but the overall, tight, allowances allocated to that sector. The Government argues that the power sector's allowances can be restricted because it is largely immune from international competition. However, the need for the power sector to make large-scale purchases of allowances will make UK electricity costs higher than in Europe, as has been the case in Phase I. There will be a knock-on effect on gas prices to the extent that fuel-switching takes place. Both of these will have an effect on industry as a whole.

5. *What have been the effects of Phase I so far on the competitiveness of (1) business in the UK, and (2) businesses across the EU?*

As explained above, the Government's tight restriction of carbon allowances in Phase I compared to other Member States, and the fact that this was imposed wholly on the power sector, has led to higher energy prices for UK businesses. Businesses in the rest of the EU will have been relatively unaffected.

6. *What are the key issues for Phase II in terms of ensuring that emissions reductions from EU states are not cancelled out by the transferring of industry to developing economies?*

It is already apparent from Phase I that for the UK to try and "go it alone" within Europe is both pointless and damaging for UK plc. It follows that for Europe to adopt a similar approach in Phase II will be similarly pointless and damaging for the EU. Phase II therefore needs to be taken forward in conjunction with international action which promotes a carbon reduction programme internationally. It does not follow that the only route to this is via a global extension of an emissions trading regime. Indeed it is already obvious that that will not succeed. Other approaches are possible, for example the "technology route". Perhaps these other approaches should also be given greater emphasis in Europe rather than relying wholly on emissions trading.

7. *How well are the EU ETS and the Clean Development Mechanism working together? What needs to be done to better integrate these markets? Is the CDM funding the right project?*

CoalPro is not competent to comment.

8. *How should aviation be included within the ETS? What are the latest indications of when it will be included?*

CoalPro cannot comment directly on these questions. However, CoalPro supports as wide an extension of the ETS as possible at as early a date as possible to avoid the perverse and discriminatory effects observed to date. It is apparent that this should include not only aviation by road transport as well.

9. *The Environment Secretary has said: "we will support the Commission in its efforts to enforce tough caps". What exactly should the Government be doing to influence this?*

The Government should insist both directly and through the Commission that each Member State meets its legally-binding obligations under the Kyoto burden-sharing agreement, and insist that appropriate enforcement action, or the imposition of appropriate penalties, is taken by the Commission to ensure these obligations are met.

However, Member States have no obligation to go beyond this. If the Environment Secretary's definition of "tough caps" is intended to take the EU and individual Member States beyond this obligation, then this is mere rhetoric. Enforcement would not be possible. Any attempt by the UK to enforce individual Member States through the Commission to go beyond Kyoto is unlikely to be acceptable. It would be an exercise in pure self-indulgence. It may make Ministers feel good but it would be utterly ineffective.

10. *How well integrated are the ETS and other EU climate change policies?*

This is a huge question. Complete across the board integration is probably unachievable. It is also early days in the life of the ETS. It is difficult to comprehensively answer this question at this stage. However, CoalPro believes that certain of the UK's proposals in the draft NAP for Phase II will impede other climate change policies. This is discussed further below.

11. *What work needs to be done now to help design a third phase of the EU ETS? How can the experience of the EU ETS be used to help the design of a post-2012 Kyoto mechanism?*

The most important requirement of the third phase is that it should afford certainty to investors if the large-scale investment in abatement technology that is required is to be forthcoming. Certainty is required both as to the longevity of Phase III, with a time horizon of at least 15 years being required, and as to the volume of carbon allowances that will be made available.

It is apparent that deep cuts in carbon emissions will not be achieved in a reasonable time frame without carbon capture and storage (CCS) from large point-sources of emissions from the consumption of fossil fuels. The ETS rules must therefore be changed to accommodate CCS as an acceptable abatement technology. Preferably, these changes should also apply in Phase II and agreement on them should be reached as soon as possible.

The EU ETS experience to date indicates that it is not a perfect mechanism, nor will it ever be. It may be a necessary, but is not a sufficient, tool in itself for Europe to achieve deep cuts in emissions. These can only be achieved by the large-scale adoption of abatement technology globally. Both other advanced economies, led by the United States, and the developing economies, led by China, have thus far not adopted Kyoto and have chosen to follow the technology route as opposed to emissions trading. Any post-2012 Kyoto mechanism that does not address the concerns of these two enormous constituencies is doomed to fail. If they continue to eschew emissions trading, then alternatives must be pursued. Large-scale research and development into abatement technology, and technology transfer, will be essential, with or without emissions trading.

B. CoalPro Would Like to Express Views on Other Aspects of EU ETS and, in Particular, on the Approach Adopted by the Government in the Draft NAP for Phase II Towards New Entrants

The Phase II allocations for incumbents in the draft NAP are based on need for sectors other than the power sector, and on fuel and technology specific benchmarks for the latter, albeit with a severe overall cap. No one fuel or technology is discriminated against.

The proposed new entrant regime for the power sector, however, is benchmarked to the parameters for gas-fired power plant. A new entrant, higher-efficiency, lower emissions coal plant under this proposal will need to purchase 60% or more of the carbon allowances that it will need to operate at an economic load factor. By contract, an existing, lower-efficiency, higher emissions coal-fired plant will only need to purchase some 30% of the allowances it requires.

There is a real risk that this proposal will result in all new power plant investment being gas-fired by default.

This would not matter so much if all new fossil-fuel power plant encompassed CCS (provided the ETS rules are changed—see above). However, adoption of CCS requires legal, regulatory and infrastructure issues to be resolved, as well as major investment. Large-scale commercial deployment of CCS is unlikely until 2020 onwards.

In the meantime, there will be a need for new, carbon capture ready fossil fuel plant to replace generating capacity likely to close over the next 15 years in the UK. Under the proposed new entrant regime, it is likely that this will all be gas-fired.

If the only objective of Government policy was a political imperative to maximise short-term reductions in carbon emissions, this might be acceptable. However, such a development will compromise all of the Government's longer term energy policy objectives for clean, secure, competitive and affordable energy. First, deep cuts in carbon emissions will require CCS at all fossil fuel plant, gas as well as coal. CCS from coal-fired plant may well be cheaper than from gas-fired plant as the process is more efficient and the fuel input cost is likely to be lower. The proposal will not therefore achieve deep cuts in emissions.

Second, it will lead to an over-reliance on gas in future leading to much greater security of supply risks. Third, it will reduce competition and finally it will lead to more expensive electricity and compromise affordability.

The proposed approach contrasts sharply with that adopted by Germany where long-term (up to 18 years) carbon allowances have been awarded which are fuel and technology specific. This has brought forward significant new investment in both new, higher efficiency, low emissions coal and gas-fired plant. It also contrasts with the massive investment now taking place in new coal-fired plant in China, which is highly efficient and relatively low emission. No such investment is taking place in the UK.

CoalPro urges the EAC to recommend to the Government that the proposed Phase II new entrant regime be changed to one in which the issue of allowances reflects fuel and technology factors, thus avoiding an over-reliance on gas and other energy policy objectives being compromised.

David Brewer
Director General

October 2006

Memorandum submitted by Drax Power Limited

Introduction

1. Drax Power Limited ("Drax Power") is the owner of Drax Power Station, the largest, cleanest and most efficient coal-fired power station in the UK. Drax Power trades its electricity in the wholesale electricity market, and at current output levels it supplies some 7% of the UK's electricity needs.

2. Drax Power is pleased to have the opportunity to participate in the Committee's inquiry, as a major player in the carbon market, indeed, the largest independent thermal generator with trading experience and perhaps one of the largest "short" installations in the UK, we consider that we are well placed to comment on lessons learned from Phase I of the EU ETS and the future of the Scheme.

General Comments

The Electricity Industry and the EU ETS: An Unfair Burden?

3. Drax Power is a strong advocate of the need to price carbon in the market in order to deliver environmental benefit and we are also mindful of the need to maintain the economic strength of the UK. However, the problem of carbon is societal, it affects all sectors and to address it the effort of compliance with targets must be distributed across all emitters.

4. Power stations contributed 29.8% of the total CO_2 emissions in the UK in 2005 and from 1990 to 2004 single-handedly delivered 33.4 million tonnes of CO_2 savings while other sectors have increased their emissions of CO_2 by 2.2 million tonnes over the same time period. All emitters must be treated equitably if we as a country are to deliver against our carbon reduction targets in the most economic and effective way.

5. All effort on CO_2 reduction in Phase I and II has been allocated to the power sector on the assumption that fuel switching was fairly easy and possible. In reality, the sector did not respond in the manner that had been assumed and little switching occurred from coal to gas. Indeed, over the last few years the sector has seen an increase in coal burn. By setting a range of emissions reduction beyond what is technically and economically feasible for the sector, operators have had to purchase additional allowances in the market, leading to a considerably higher than anticipated cost of EU ETS compliance which in turn has fed through to increased electricity prices for the UK consumer.

6. Other sectors have been allocated allowances on a "business as usual" basis and have, in fact, been over-allocated with the result that these sectors have been provided with a windfall as well as being exempted from the discipline of carbon reduction. There is a need to spread the compliance requirement over a wider set of participants to avoid dependency on a single sector.

7. Allocating all the effort on a single sector makes it unlikely that the maximum possible reductions will be made. Given the nature of the sector in terms of the scale of the investment and the long term investment cycles, the actual extent of CO_2 reduction in Phase I and II (rather than the extent of reduction in allocations) will depend principally on the extent of closure of coal-fired plant under the Large Combustion Plant Directive and the extent of gas-fired plant construction. Neither of these factors are related to the introduction of the EU ETS and indeed the current market conditions are still not favourable for new gas-fired entry. As a result, the success of the Phase II NAP will, as for Phase I, depend entirely on the ability of the power sector to purchase sufficient allowances to accommodate the CO_2 cap.

8. Further, if the UK power sector takes a greater burden than its European competitors, it will diminish the relative value of generating capacity in the UK and capital available for new build will be more likely to go to continental Europe in an effort to capture allowance value. This is particularly important given the need for new capacity post implementation of the Large Combustion Plant Directive.

Short Term Policies in a Long Term Industry

9. The electricity industry is characterised by major, long term, investment with typical payback periods of 10 to 15 years. Through such investment generators can address the main environmental constraint of carbon but only if there is a certain and stable long term energy policy framework. Clarity and long term stability in the regulatory framework is needed to minimise the risk of future intervention, which would simply serve to destabilise the regime, increase uncertainty and disrupt the associated traded commodity markets.

10. The EU ETS is a policy with a short term outlook. Despite the Government's CO_2 aspirations being clear, the necessary long term regulatory and economic framework to deliver against these objectives is not in place. The EU ETS should provide a clear framework for CO_2 reduction over the long term, well beyond 2012, such that the future value of carbon can be assessed to enable a more informed view on the significant investment decisions needed within the sector.

11. Carbon targets need to be agreed into the long term, sufficiently far ahead to provide a degree of confidence in investment. A 15 year time horizon should be sufficient to complement the investment cycles typical of the electricity industry.

EU ETS and other Climate Change Policies

12. The EU ETS and similar legislation cannot be considered as purely environmental in nature. Currently the EU ETS is viewed as a stand-alone piece of legislation with its own sets of targets and objectives which have a strong potential to conflict with other social and/or economic goals. It should be recognised that, for the power sector, environmental and energy legislation are closely intertwined. Other sectors are also impossible to manage by trying to separate out the environmental drivers from the rest. Hence we should be viewing EU ETS as just one of the mechanisms to deliver a well thought out and coherent policy delivering change throughout the economic spectrum.

Phase I

Lessons from Phase I

13. The UK submitted its NAP to the European Commission on 20 April 2004 and did so on a provisional basis, making it clear that the figures were subject to change. Subsequently, on 10 November 2004, the Government submitted amendments to the Commission increasing the number of allowances from 736 to 756Mt CO2. Following the Commission's refusal to accept amendments to the UK NAP, the UK Government challenged the Commission's Decision in the European Court of First Instance (CFI). The CFI found in favour of the UK Government and annulled the Commission's Decision. In February 2006, the Commission took a new Decision in which it rejected the amendments proposed by the UK Government on different grounds. In April 2006, the UK Government decided not to pursue further action, a decision which left the power sector with a further shortfall of 20 million allowances.

14. This lack of an accurate estimate of emissions from which to develop an appropriate baseline cost the power sector, and hence the electricity consumer, some €300 million (assuming a requirement to purchase allowances at €15/tonne).

15. A key lesson to learn is that the Government needs to listen to industry and other stakeholders regarding the probity of data and assumptions used for basing projections and allocations. The process has improved somewhat for Phase II, but, the lesson for introducing other, less well characterised sectors, into any future EU ETS is evident.

16. There needs to be a better assessment of what emissions reduction is technically and economically feasible across the traded sector and the assessment of emissions reduction on the competitiveness of UK industries. The rationale for targeting the power sector in Phase I was that the industry was somehow protected from international market pressures due to limited physical links. This was not, and still is not, justifiable. The power sector is primarily driven by the price and availability of fuel, by the time Phase II arrives we will have significantly increased international fuel links—upgraded gas interconnectors, LNG import terminals and enhanced coal import facilities—and the UK power sector will be a completely reliant upon and subject to the operations of international fuel markets.

17. Installations/sectors should not be allocated more than their need. We are disappointed that, in Phase II, Government has not set allocations below the "business as usual" case, particularly since many sectors' allocations (apart from electricity) were more than their actual emissions in Phase I.

Phase II

Auctions

18. The Government should allocate allowances in such a way that allows all sectors to contribute equitably towards emissions reduction targets and provides more incentive to introduce less carbon intensive processes. Drax Power does not believe that the power sector should bear the entire burden of emissions reductions and, perhaps more importantly, accommodate all the uncertainties and inaccuracies in the allocation plan.

19. Allowances for auctioning should not be taken solely from the power sector in Phase II. This simply translates to a lower cap for the sector and a greater need for generators to make up shortfalls across the market. The need for a wider base of effort is especially valid in view of the proposals towards greater auctioning across all sectors and towards a reduction in allocation for industrial new entrants. The signal needs to be sent to all incumbent installations in industry sectors so that they can develop the discipline of accounting for carbon. It is even more important for UK industry (that is, non power sector) to pick up this signal in Phase II since they have not been required to consider carbon and, indeed, have benefited from large cash injections as a result of over-allocations during Phase I.

20. We have concerns about too rapid a movement towards high levels of auctioning and believe that an inappropriate use of auctioning could distort the market. In addition, it would be risky to introduce any radically new allocation process without having much more understanding of the implications. We should not be using Phase II to test the auction philosophy whilst there are still so many other unknown factors surrounding the implementation of the overall EU ETS.

21. Auctions are not an appropriate mechanism for the power sector. Auctions work best when the marginal value of that commodity can be determined by market participants and *in extremis* they can decline to bid and effectively cease supply. In the case of electricity supply that marginal value is very difficult to determine and non supply is not acceptable, auction prices in a balanced/short market can therefore be extreme. This produces instability which is a barrier to new entry.

Preserving the European Economy

22. The key issue for the EU as well as for the UK Government is to ensure that Phase II provides the correct signals for moving towards a low carbon future at a rate which does not impair the European economy but which stimulates new, and economically viable, low carbon technologies and techniques.

23. Such a judgement needs to take into account the extent of progress in developing countries where CO_2 emissions are currently increasing at a significant rate and where a low level of controls and constraints may act to encourage high carbon emissions. This is clearly a long term issue which has to be addressed in the post 2012 regulatory regime and hence the focus in Phase II should be about encouragement and implementation of low carbon technologies rather than focusing on headline-grabbing CO_2 reduction targets.

EU ETS and the Clean Development Mechanism

24. Phase II will provide data on how well the EU ETS and the Clean Development Mechanism interact. Currently the aim is to assess how Project Credits (CERs and ERUs) can be procured and the risks associated with them.

25. The UK Phase II NAP has capped the amount of project credits at a percentage of the "free" allocation. This seems to counteract the actual effort that has been imposed on sites such as Drax to meet its necessary level of purchase. To meet its target Drax will have to source and purchase an extra 5 million tonnes of carbon each year in Phase II and its ability to source the carbon has further been hampered by the imposition of a very restrictive cap on the level of credits that can be submitted for compliance.

26. We support the argument that the limit for use of project credits should be based on effort. Hence our view is that companies in the power sector should be allowed to purchase their entire shortfall using project credits. The current proposals disadvantage Drax whilst providing advantage to a number of others outside the power sector who, having been allocated their complete "business as usual" allowances will be able to obtain an additional windfall by substituting their ordinary allowances with CERs, which trade at a discount.

PHASE III

Looking Ahead

27. Drax believes that the EU ETS has the potential to move from a policy with a short term outlook to a programme providing a clear framework for CO_2 reduction into the long term, well beyond 2012. However, this will only happen if the Government regards it as a part of a much wider programme such that the future value of carbon can be assessed to enable a more informed view on the significant investment decisions needed within the power, and all other, sectors.

28. Carbon targets need to be agreed into the long term, sufficiently far ahead to provide a degree of confidence in investment. A 15 year time horizon should be sufficient to complement the investment cycles typical of the electricity industry.

29. Carbon reduction targets need to be stable, with wide political acceptability across the whole of the EU to prevent subsequent modification. They also need to be realistic; we note that the outcome of the first year of the EU ETS sent a price shock throughout the carbon market, discrediting the Scheme and casting doubt on its future. Long term, stable basic rules for, *inter alia*, benchmarking for allocations, new entrant reserve and auctions are essential if the objectives of the EU ETS are to be achieved.

30. Harmonisation of effort across the EU and across industry sectors is vital. A process to develop a consensus around the structure of the Scheme is required to deliver a robust, transparent and effective decision making process. Independent decision making by each of the 25 Member States is not conducive to an efficient and effective market mechanism.

31. There should, if possible, be a relationship between emission reduction efforts in Europe and other countries to encourage the development of low carbon technologies in the developing world.

CONCLUSIONS

32. The following summarises the key conclusions of this submission:

(i) The problem of carbon is societal, it affects all sectors and to address it the effort of compliance with targets must be distributed across all emitters.

(ii) Carbon targets need to be agreed into the long term, sufficiently far ahead to provide a degree of confidence in investment.

(iii) The EU ETS should be viewed as just one of the mechanisms to deliver a well thought out and coherent policy delivering change throughout the economic spectrum.

(iv) It is essential that accurate data and assumptions are used for establishing an appropriate baseline from which to base allocations.

(v) Installations/sectors should not be allocated more than their need.

(vi) Allowances for auctioning should not be taken solely from the power sector in future Phases.

(vii) The focus in Phase II should be about encouragement and implementation of low carbon technologies rather than focusing on headline-grabbing CO_2 reduction targets.

(vii) The limit for use of project credits should be based on effort and the power sector should be allowed to purchase their entire shortfall using project credits.

(ix) Harmonisation of effort across the EU and across industry sectors is vital and a process is required to develop a consensus around the structure of the Scheme to deliver a robust, transparent and effective decision making process.

October 2006

Memorandum submitted by EDF Energy

1. WHAT ARE THE KEY LESSONS TO LEARN FROM PHASE I OF THE SCHEME?

EDF Energy is fully committed to tackling climate change and believes the EU Emissions Trading Scheme (ETS) is an important mechanism in the management of emissions across Europe. The current scheme, in its present stage of development and structure cannot drive the long term investments needed to make deep cuts in carbon. The primary reason for this is that the policy timescales of the EU ETS do not match the investment life cycles of the sector and investors are unwilling to accept the regulatory uncertainty surrounding future carbon dioxide abatement targets.

In Phase I, Government set unrealistic targets for the electricity sector that could not be achieved through abatement in the time available, requiring large scale purchasing of allowances. The results in 2005 show that simply setting tight caps for the electricity sector has not produced a reduction in emissions but rather the purchasing of 36.5MtCO_2 of allowances from other Member States at a cost to the UK of around €730 million.[15] This is not delivering an environmental benefit as a result of other Member States having set generous caps in Phase I.

In addition, offering "business as usual" to other sectors in the UK does not provide sufficient incentive for industry to effectively engage in the EU ETS and fully integrate the cost of carbon into operational and investment decisions. This approach is inconsistent with "*Government's long term objective to move away from free allocation of allowances so that the full cost of carbon is taken into account by business in making investment decisions*" and operational decisions. The EU ETS is currently being used by other sectors as a compliance scheme.

2. HOW LIKELY IS IT THAT UK FIRMS WOULD SUCCESSFULLY REDUCE EMISSIONS BY AT LEAST 7MTC BY 2012, IN LINE WITH THE PROPOSED PHASE II NAP?

The EU ETS is designed to provide organisations with flexibility. As such it allows the participants flexibility to trade allowances and deliver the required overall emissions reductions in the most cost-effective way possible. An efficiently functioning scheme will not necessarily reduce CO_2 emissions in the UK or deliver year-on-year CO_2 emission reductions in the UK.

EDF Energy believes the actual reduction Government is seeking in Phase II is closer to 40 Mt of CO_2 (11 MtC) per annum compared to business as usual projections during this period. This includes the annual reduction of 29.3 Mt CO_2 (8 MtC) plus the 10 Mt CO_2 (3 MtC) difference between EDF Energy's business as usual projections and the Government's updated energy projections for Phase II.

[15] Assuming a price of €20 per tonne CO_2.

We do not believe this reduction is feasible by 2012. The EU ETS, as presently constituted, does not provide investors with certainty around the structure of EU ETS beyond 2012 and future abatement targets, and therefore is not capable of sending the signals required to deliver investment in lower carbon technologies in the UK and EU. The five year timescale of Phase II does not match the investment life cycles of the sector, hence investors are unwilling to accept the political and regulatory uncertainty surrounding future CO_2 abatement targets.

We also consider that the present EU ETS market is too fragile and fragmented to provide long term price signals or to sustain the necessary long term investment. In its current form, it will continue as a clearing market and produce a reference price for CO_2.

The Government's proposal that all other sectors will receive an allocation based on business as usual and that the electricity sector will bear the burden of the total emissions reduction against business as usual does not provide sufficient incentive for other sectors to reduce emissions.

Given the lack of long-term signals to deliver investment to fundamentally change the carbon footprint of the electricity sector, emission reductions in the sector are likely to be limited to fuel switching from coal to gas. EDF Energy forecasts that gas prices could remain particularly high for the rest of this decade resulting in limited fuel switching and CO_2 reductions. Therefore, the only way the sector can meet the shortfall in allowances is to purchase additional allowances in the market.

3. What Have Been the Effects of the Method Chosen for Allocating Allowances in Phase I?

The allocation methodology adopted for Phase I to distribute allowances within the sectors has created significant market distortions within the electricity industry. In particular, the use of a historic allocation methodology has under-allocated to coal power stations fitted with FGD when compared with non-FGD stations, because it failed to take into account the changing generation patterns driven by tighter sulphur limits. These distortions have created a significant commercial impact.

However, in Phase II the allocation methodology selected for the electricity sector, ie standard benchmarks based on plant category with the load factor adjusted for opted out of the LCPD coal plant, will reduce these competitor distortions.

4. Has the Government Identified the Correct Proportion of Allowances to be Auctioned in Phase II? Should These be Drawn Solely From the Power Sector's Allocation? What Will the Effect of This Auctioning be on Industry and the Price of Carbon?

The EU ETS Directive states that Member States shall allocate at least 90% of the allowances free in Phase II, and therefore the maximum proportion of allowances the Government can auction is 10%. In principle, EDF Energy agrees with up to 10% of allowances being auctioned. However, Government should recognise the combination of a tight sector cap and a large contribution of allowances to be auctioned will force the electricity sector to purchase around 40% of allowances from the market compared to business as usual projections. This is far higher than the 10% identified in the Directive and places a heavy burden on the sector and on its customers.

EDF Energy believes that revenue generated through the auctioning of allowances should be used to provide long term certainty for participants within the sectors covered by EU ETS. The policy mechanisms for providing certainty are discussed in more detail under Question 9 of our response, below.

Electricity Sector

EDF Energy strongly disagrees with the allowances to be auctioned being deducted solely from the electricity sector. Allowances to be auctioned should be deducted from all sectors. Offering business as usual to all other sectors does not provide them with the incentive to internalise the cost of carbon or reduce emissions. This is also inconsistent with "*Government's long term objective to move away from free allocation of allowances so that the full cost of carbon is taken into account by business in making investment decisions*" and operational decisions.

Price of Carbon

Auctioning is an alternative method for allocation or distributing allowances and forces operators to buy allowances from the market, facilitating the internalisation of the cost of carbon. Auctioning of core allowances will not change the overall supply and demand balance within the EU, hence does not affect the actual price of carbon.

5. What Have Been the Effects of Phase I so far on the Competitiveness of:

1. business in the UK, and
2. business across the EU?

EDF Energy believes that business in UK and across the EU has been affected by the introduction of EU ETS through the increase in electricity prices due the integration of carbon into wholesale electricity prices. However we do not agree with statements by both industry and government that withdrawing free allowances from industry sectors would expose them to more European and International competition.[16] As outlined in Table 2 of the Phase II EU ETS "Overall Regulatory Impact Assessment (RIA)"[17] and a recent Carbon Trust report,[18] industrial sectors are exposed to different levels of international and EU competition. The impact on competitiveness is dependent on the following three key variables for any given sector or business:

— Energy intensity;

— The ability to pass cost increases through to consumers in an increased price of the sector's final product; and

— The opportunities for abatement.

The RIA analysis[19] and a recent Carbon Trust report[20] acknowledge that the Aluminium sector would find it difficult to pass through additional carbon costs. However, the reports support our view that steel and cement are able to pass through some of the cost of carbon, with other sectors such as the brewing and petroleum sectors, engineering and vehicles, being able to pass on the cost of carbon with little impact on their profitability.

6. What are the Key Issues for Phase II in Terms of Ensuring that Emissions Reductions from EU States are not Cancelled Out by the Transferring of Industry to Developing Economies?

EDF Energy does not believe that Government can "safe-guard" against industry moving to other countries. There are new, competitive markets emerging within these countries in which industry should and will continue to invest in. The issuance of business as usual allowances and other incentive to these sectors within the UK and EU will not:

— protect UK business from owners moving their operations aboard. There are numerous other influences that contribute to this decision on moving operations; and

— provide signals to investment within the UK and Europe.

As outlined above, according to a recent Carbon Trust report and the International Energy Agency (IEA) report on Industrial Competitiveness under EU ETS,[21] most sectors are able to pass on the cost of carbon with little impact on their profitability; hence the EU ETS would not be the driver for industry moving to developing economies. The non-ferrous metal sector including aluminium is most vulnerable to increased in electricity prices, has minimum opportunity for abatement and would find it difficult to pass through additional carbon cost.

In Phase II, the Clean Development Mechanism (CDM) provides an effective mechanism for transferring low carbon technologies to developing countries to reduce their potential carbon footprint.

7. How Well are the EU ETS and the Clean Development Mechanism Working Together? What Needs to be Done to Better Integrate These Markets? Is the CDM Funding the Right Projects?

The EU ETS and CDM markets are currently working in parallel. Participants are awaiting the finalisation of the independent transaction log (ITL) to allow them to use carbon credits generated from CDM projects for compliance. The ITL is scheduled to be operational in mid-2007 hence CDM credits can only be used for compliance in the final year of Phase I.

It should be recognised that both markets share considerable political uncertainty due to lack of international and EU long term frameworks. As discussed previously, this is hindering potential investment of 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.

[16] Most sectors claim that the impact on profitability as a result of auctioning would make the process prohibitively expensive (oil and gas £22 million, pulp and paper £8 million, Steel £46–£51 million). The cement sector considers that auctioning would lead to a loss of 26% market share.

[17] Table 1, page 36 of the Allocation Methodology RIA.

[18] "The UK Climate Change Programme: Potential evolution for business and the public sector"—www.thecarbontrust.co.uk/carbontrust/about/publications/CTC518_CCPR2.pdf

[19] Table 1, page 36 of the Allocation Methodology RIA.

[20] "The UK Climate Change Programme: Potential evolution for business and the public sector"—www.thecarbontrust.co.uk/carbontrust/about/publications/CTC518_CCPR2.pdf

[21] International Energy Agency (IEA) report on Industrial Competitiveness under EU ETS, February 2005.

We believe the linkage between the two markets needs to be clearly managed going forward. CDM has an important role to play in allowing developed countries to undertake emission reducing projects in developing countries. It assists in the transfer of capital to developing countries and bridging any gap between realistic abatement and the EU target reductions, particularly if targets are set at levels that cannot be achieved through abatement. We believe that the limit on the use of project credits should be consistent across Member States; however unlimited use of JI/CDM project credits for compliance has the ability to create an oversupply of project credits impacting on the balance of supply and demand, resulting in the destabilisation of the EU ETS market.

Is CDM Funding the Right projects?

EDF Energy does not support the exclusion of certain forms of low/carbon free technologies from CDM. Certain large generation developments that are currently excluded have the potential to make a considerable contribution in reducing emissions compared to business as usual. By excluding these technology options we need to be careful that we are not burdening countries by developing projects with a carbon footprint that is unsustainable in the long term.

8. How Should Aviation be Included Within the ETS? What are the Latest Indications of When it Will be Included?

In principle, EDF Energy supports the expansion of the sectors and types of greenhouse gases incorporated within the EU ETS. We believe expansion criteria should be established to provide a structured and methodical decision making process for the inclusion of additional sectors and greenhouse gas within the EU ETS. These criteria should include:

- The sectors ability to influence and manage emissions profile including ability to abate emissions at source through consumption and technology;
- Impact on market to ensure that inclusion does not destabilise the existing scheme or undermine its effectiveness;
- Ability to accurately monitor and report emissions; and
- Emissions that are from the installation are above a de minimis emissions threshold, ie large emitters.

EDF Energy supports the UK and the Commission's desire to manage and reduce emissions from the aviation industry. Emissions from aviation are rapidly growing and are not expected to fall in the short or medium term. EDF Energy believes that a separate, dedicated emissions trading scheme should be introduced for aviation industry. This scheme could be linked to the EU ETS via a gateway that allows the aviation industry to purchase allowances from the EU ETS. The aviation industry does have the potential to create a drain on the EU ETS allowance with little emissions reduction by the industry. Therefore we believe that the amount of allowances the aviation industry could buy should be capped at a level that ensures the aviation sector contributes to the overall objective of halting climate change. This cap would also create supply demand balance certainty for the market.

We also believe the scheme should initially focus on CO_2 emissions from the aviation industry. Further work is required on the non-CO_2 impacts of aviation and the development of a monitoring and reporting standard for non-CO_2 gases emissions (specifically NOx).

This proposal could form the basis of international scheme for aviation industry which is currently not subject to commitment to reduce emissions. This would demonstrate the EU's leadership in tackling climate change and engages one of the sectors with the largest growth in greenhouse gas emissions.

9. The Environment Secretary has Said: "We Will Support the Commission in its Efforts to Enforce Tough Caps". What Exactly Should the Government be Doing to Influence This?

EDF Energy supports the Government's efforts to work with the Commission and other Member States in the development of the Phase II National Allocation Plan. The carbon market does require volume constraints to stimulate trading and provide sufficient incentive for industry to effectively engage in the EU ETS and therefore Member States and the sectors should not receive business as usual allocations. We believe Government should continue to work with the Commission and other Member States in ensuring that all Member States are contributing to emissions reductions across the EU.

However, establishing tough caps in UK and across the Europe is not going to drive investment in low carbon technologies and abatement to commence the transition to a low carbon economy. The EU ETS, as presently constituted, is not capable of sending the signals required to deliver investment in lower carbon technologies in the UK and EU. Its current structure is not capable of underwriting the investment needed to reduce CO_2 emissions in the electricity and other large industrial sector owing to the political and regulatory uncertainty surrounding future carbon dioxide abatement targets beyond 2012. Although considerable efforts are being made to agree long term abatement targets across the EU (Phase III and beyond), these are

unlikely to be agreed in the near future. This creates a void in political certainty and a significant hurdle for early investment in low carbon technologies. We believe the key priority for Government is providing political certainty for investors on future carbon dioxide abatement targets.

EDF Energy believes that commercial market-based instruments can be used to underpin the significant capital investment required to lower the carbon intensity of the electricity sector. This can be done without exposing the UK Government to unacceptable financial risks by controlling the amount of CO_2 reductions the Government commits to in this way. These instruments can be designed to reinforce the integrity of the EU ETS in the long term within the framework of competitive and liberalised energy markets, as advocated by the UK Government. We have outlined how such a Carbon Hedge would work in practice in our response to the Energy Review and we would be happy to provide further details on this.

10. How Well Integrated are the ETS and Other EU Climate Change Policies?

The nature of climate change and its importance places a huge responsibility on all areas of society to address their impact. Current European polices are fragmented and do not fully address the continued growth in emissions and energy consumption from households, business and government. One of the key challenges for the EU is to develop a comprehensive climate change programme that engages all areas of society. While the UK Government's climate change programme is comprehensive, it introduces numerous policy measures with different prices of carbon, for example UK ETS. CCL, LECs and CCA carbon price and EU ETS carbon prices. In the UK, there is a need to streamline climate change policies to focus specifically on carbon and a single price of carbon. It should be recognised that the EU ETS is one tool in a suite of policy measures that need to address climate change.

In addition, we believe there needs to be greater consistency in the design and implementation of the various policy instruments, regulations and Directives in Europe that seek to address climate change, such as measures to encourage energy efficiency and renewable energy sources.

11. What Work Needs to be Done Now to Help Design a Third Phase of the EU ETS? How Can the Experience of the EU ETS be Used to Help the Design of a Post-2012 Kyoto Mechanism?

EDF Energy sees the agreement of long term international targets for greenhouse gas reductions and agreement on the design and use of flexibility mechanisms over the next 25–30 years as critical to mitigating climate change. Once these parameters are established it is relatively straightforward to make the necessary improvement in the administrative arrangements of the EU ETS. These would include:

- Expansion of the trading scheme to include other sectors and other greenhouse gases: the inclusion of these sectors should proceed at a pace that does not compromise the existing scheme and allows the market to adapt to changes.
- Length of future allocation periods: these should as far as possible match the investment life cycles of assets that will be needed to deliver the necessary shift in the UK's carbon footprint. A 15 year allocation period post 2012 would be a minimum requirement, but other periods may be appropriate, as long as sufficiently long term international targets have been agreed.
- Level of auctioning: it should be unavoidable that all business activities must be exposed to the full costs of greenhouse gas emissions to encourage them to take appropriate action on climate change. In our view this should happen sooner rather than later.
- Harmonisation of allocation methodologies: the importance of the allocation methodology disappears as we move to full auctioning of allowances. However where the allocation of free allowances remains it is important to harmonise methodologies to prevent market distortions and establish parity with low carbon or carbon free technologies.
- JI/CDM mechanisms: these must be reviewed in the context of the international targets. They are effective in transferring some capital to developing countries but we need to be careful that we are not burdening countries that are developing these projects with a carbon footprint that is unsustainable in the long term.
- International targets: these are fundamental, and different frameworks for developing targets might be helpful in reducing the level of political risk. The level of risk being taken by either the industrial investor or a national Government, in the drive to lower greenhouse gas emissions, is largely determined by the targets an individual country is willing to sign up to in international agreements. Government is unlikely to sign up to long term binding targets unilaterally and industry will be guided by Government's position.

We strongly support the EU ETS and believe it is an important policy measure in mitigating climate change. Its current structure however is not capable of underwriting the investment needed to reduce CO_2 emissions in the electricity sector. The primary reason for this is that the policy timescales of the EU ETS do not match the investment life cycles of the sector and investors are unwilling to accept the regulatory uncertainty surrounding future carbon dioxide abatement targets.

October 2006

Memorandum submitted by E.ON UK

1. E.ON UK is the UK's second largest retailer of electricity and gas, selling to residential and small business customers as Powergen and to larger industrial and commercial customers as E.ON Energy. We are also one of the UK's largest electricity generators and operate Central Networks, the distribution business covering the East and West Midlands. We are a leading developer of renewable plant, including biomass generation. We welcome the opportunity to comment on the lessons from Phase I of the EU ETS.

(i) *What are the key lessons to learn from Phase I of the Scheme?*

2. A number of commentators are concerned that the scheme is not delivering the necessary CO_2 reductions and point to over allocation by a number of EU Member States. However, we believe it is necessary to draw a distinction between the overall emissions cap for phase 1 and the effectiveness of the EU ETS as a tool for delivering the necessary reductions. Whilst the suitability of the original caps chosen for Phase I may be debateable, there is no reason to suggest that the trading arrangements will fail to deliver the determined reductions.

3. Alongside the experience of trading emissions prior to the first Kyoto commitment period of 2008—2012, one of the primary objectives for Phase I was to ensure that the monitoring and verification aspects of the scheme worked. At the macro level this has proved to be the case, and on this basis E.ON UK believe that the scheme works and is fit for purpose. However, there are lessons to be learnt from Phase 1:

— **Compliance.** There are currently seven significant stages to ensure compliance. This bureaucracy creates significant opportunity for error by either operator or verifier. Simplification of this process would enhance the current arrangements.

— **Consistency of National Allocation Plans.** The wide variety of allocation methodologies used for the formulation of NAPs by member states, together with the late submission of many allocation plans, have added to uncertainty and damaged confidence in the scheme. This has been recognised by the Commission who have emphasised the importance of meeting the deadlines for NAP submission in future. We believe that these problems can only be addressed through increased transparency and the harmonisation of allocation methodologies across the EU.

— **Approval of UK National Allocation Plan.** The Government's failure to gain Commission approval for allocation of its preferred level of allowances, which led to an under-allocation of 20MTeCO_2 and an unnecessarily onerous burden placed on the power sector, was disappointing. In future, it is vital that both the Government and industry have confidence that the final NAP submission to the Commission accurately captures the UK's requirements for second trading period in line with the proposed allocation methodology.

— **Longevity of the trading rules.** Most importantly for the success of the emissions trading scheme participants need to have confidence in the longevity of the trading rules. It is clear that a trading period of just three years will be inadequate to encourage investment in low carbon technologies. We therefore recommend that the scheme should adopt longer trading periods for Phase III. A phase length of 15 years would not only increase the stability of the scheme, but would also encourage significant investment in abatement measures. Ultimately there needs to be a clear pathway achieved by international agreement which gives a long term commitment to emissions reductions.

— **Burden Sharing.** Large electricity producers have borne the entire burden of the emissions reductions in Phase I. The majority of this cost has been passed through to electricity consumers. Whilst this may have incentivised consumers to cut their electricity consumption, it has unnecessarily limited the scope of the scheme. The result has been an extremely weak signal to industry (other than the ESI) to reduce CO_2 emissions from industrial processes. In effect industries have been protected from the need to investigate the opportunity for low carbon investments.

— **Disclosure of data.** The circumstances in which year one data became available was clearly unsatisfactory and this must not only be addressed for the remaining years of Phase I but also Phase II and beyond.

(ii) *How likely is it that UK firms would successfully reduce emissions by at least 7MtC by 2012, in line with the proposed Phase II NAP?*

4. In terms of the UK's emissions reduction effort under the EU ETS, it will be the large electricity producers rather than UK firms as a whole who will have to comply with this reduced allocation. This requirement will be met either by reducing emissions or by buying and selling permits, given that trading is intended to achieve emission reductions in the most efficient manner across the EU as a whole.

(iii) *What have been the effects of the method chosen for allocating allowances in Phase I?*

ALLOCATION METHODOLOGY

5. The 20MTeCO_2 under-allocation from Phase I has meant that the UK's total allowance allocation, which was already stretching, has resulted in an additional burden on the power sector, and through the power sector, on the UK as a whole. The reason that the power sector has been disadvantaged in this respect is a result of the sector allocation methodology chosen for Phase I.

6 E.ON UK believes that all sectors should have contributed to the overall emissions reduction. For those sectors covered by the scheme which receive an allocation based on business as usual there is little incentive to drive out emissions from inefficient industrial processes. Whilst the sector allocation methodology for Phase II also places the entire burden on the large electricity producers we urge the adoption of a different approach for Phase III. Burden sharing between industries would contribute significantly to the efficiency of the market and help to deliver the full potential of the emissions trading scheme.

BENCHMARKING

7. Whilst we were happy to move from an allocation to the power sector based on grandfathering of historic emissions based on a benchmarking methodology we are wholly dissatisfied with the large electricity producer benchmarks suggested for Phase II.

8. The Phase II benchmark for power plants penalises fossil-fired plants opted-out of the Emission Limit Value (ELV)/National Emission Reduction Plan (NERP) provisions of the Large Combustion Plants Directive (LCPD). These plants which will be closed by 2015 and operators who have opted out these plants have done so on the basis that they will replace this capacity with new, more efficient, lower carbon generating plants. The approach proposed penalises these operators compared to those who have decided to opt in their plant to enable them to maintain these plants in operation beyond 2015.

9. Based on historic running, all coal-fired plant should be assigned an average load factor (which would be 47.1%). However the load factor assigned to opted-out plants assumes that the allowable 20,000 operational hours for which these plants are able to operate up to and including 2015 will be spread equally over 8 years and then applied to the Phase II period (2008–12). This gives an average load factor of 28.5%. The LCPD does not require such averaging and only sets a limit on the total hours and the need to close before 2016. An operator using up this 20,000 hours allowance in Phase II could have achieved an average 45.7% load factor. The Regulatory Framework for 2008–15 recently agreed with the Environment Agency for these plants also allows higher load factors.

10. We also believe that the proposals are unfair since the difference between the allowances calculated using the opted-out load factor and the average coal load factor is returned to other sub-sectors to their advantage and the further disadvantage of opted-out plant. There is also no recognition that opted-in plant may also be constrained by other LCPD requirements and they are therefore granted an over-allocation. Such plant include:

- Plant that opted in to the ELV provisions at a late stage and that will be unable to fit emission abatement systems before 1 January 2008. Such plant will be limited by the LCPD to 2,000 hours/year until the abatement systems are operational;
- Plant operating under the NERP that will be constrained by the National Emission Reduction Plan for NOx calculated under the LCPD;
- Plant granted the average historic load factor when their historic running has been much lower. In one case the granted load factor is some 170 times that achieved in the past and this plant should be treated as a peak load plant in the same fashion as oil-fired plant.

(iv) *Has the Government identified the correct proportion of allowances to be auctioned in Phase II? Should these be drawn solely from the power sector's allocation? What will the effect of this auctioning be on industry and the price of carbon?*

11. In order for the full cost of carbon to be taken into account both by incumbents and new entrants it is necessary to begin to move away from the free allocation of allowances. E.ON UK fully supports such a move and recognises that auctioning represents one method of achieving this. It is important to note the interaction between the maximum level of auctioning permitted under the Directive and the UK's allocation methodology. With this in mind the 7% auctioning figure seems appropriate given the potential for unused new entrant allowances to push this figure towards the absolute maximum of 10%. It is vital that this percentage is not breached as the unnecessary cancellation of allowances would not promote confidence in the scheme.

12. E.ON UK believes that everybody should contribute to the auction pot. If other sectors are not involved in the Phase II auction process they are likely to lack the relevant experience which has the potential to provide a competitive advantage in future phases. We concur with the government that it is important to trial auctioning in order to understand how this methodology might work before potentially moving towards full auctioning. This trial stage is of equal importance for all participants within all sectors. Without

experience of auctioning at an early stage (eg Phase II), sectors other than the electricity supply industry will be at a significant disadvantage, especially given that auctioning is likely to be of a greater magnitude by the time they do become involved.

13. In terms of the effect on industry and the price of carbon, the most important factor must be to ensure that there is a harmonised approach to auctioning across the EU. Whilst a move towards a charged allocation is clearly desirable for the success of the scheme, an appropriate transition period will be required in order to minimise price volatility and to facilitate confidence in the auctioning arrangements. It should also be noted that auctioning is not the only alternative to a free allocation.

(v) *What have been the effects of Phase I so far on the competitiveness of (1) business in the UK, and (2) business across the EU?*

14 As discussed, the entire emissions reduction burden for Phase I of the EU ETS fell on the electricity generating sector. The government has indicated that the rationale for this had been the assumption that generators are relatively insulated from international competition. Whilst this may be true in terms of competition for product, the industry is not insulated from international competition for capital. This approach can reduce the attractiveness of the UK electricity sector as a market for investment.

15. E.ON UK believes that the future competitiveness of the UK will depend upon equitable burden sharing across all sectors. By placing the entire burden on the ESI the Government has determined that an increase in the price of electricity is an equitable way to distribute the cost of emission reductions. However, this approach only encourages energy efficiency and does little if anything to drive out avoidable CO_2 emissions inherent within industrial processes. The EU ETS will only operate at its most efficient if all installations receive the correct signal to seek out abatement opportunities. In addition, the encouragement and development of new clean technologies across all industrial sectors can only be of economic benefit to the UK over the longer term.

(vi) *What are the key issues for Phase II in terms of ensuring that emissions reductions from EU states are not cancelled out by the transferring of industry to developing economies?*

16. The most effective way of tackling this issue is not through protecting domestic industries but through securing an international consensus on global action to reduce CO_2 emissions which encompasses developed and developing countries. For phase II this has been achieved through the Kyoto protocol although not all countries are signatories. For phase III and beyond a new framework will be required which is already the objective of UK and EU policy.

(vii) *How well are the EU ETS and the Clean Development Mechanism working together? What needs to be done to better integrate these markets? Is the CDM funding the right projects?*

17. The EUETS/CDM link is working better than could be expected considering the uncertainties around the process. This is evidenced by the number of transactions which have been reported and the evolution of infrastructure (brokers, lawyers, asset fund managers) in Europe to enable the deals to happen. Now that CERs (Certified Emissions Reductions) are being issued under the CDM the market still has risks associated with when transfer will happen—an operating International Transaction Log is critical to the ability to use CERs for compliance in Phase 1. There is strong evidence of price linkage between CERs and EUAs (EU Allowances—the unit of trading under the EU ETS)—brokers are currently offering CERs at a percentage discount to EUA price. For phase 2 the CER compliance limits currently being revealed in each NAP will be a significant driver of CO_2 prices in the EU. As with most other aspects of governmental discretion in this scheme, it is important for competition reasons that such limits are harmonised.

18. The UNFCCC (through the CDM Executive Board) has been mandated by the signatories to implement Kyoto with strict guidelines and verification processes to ensure environmental rigour of projects. To apply a further layer of selection is inappropriate, inefficient and results in a non-homogenous market with different prices for each methodology or even country of origin.

(viii) *How should aviation be included within the ETS? What are the latest indications of when it will be included?*

19. Aviation clearly contributes significantly to the emission of CO_2. It is therefore important that the sector is included in the trading scheme. However, whilst we believe that it is in the long term interest of the EU ETS to extend its scope and include new sectors, there is probably insufficient time remaining to incorporate an aviation sector within Phase II. There are clearly a number of issues for aviation which need to be addressed prior to inclusion. However, it may be appropriate for additional industries such as aviation to trial a sector scheme running concurrently with Phase II. This would provide useful experience and enable a number of problems to be resolved prior to aviation joining the EU ETS in Phase III. Given the size of the aviation sector, a rushed entry in to the second phase could disturb market price signals and adversely affect the scheme.

(ix) *The Environment Secretary has said: "we will support the Commission in its efforts to enforce tough caps". What exactly should the Government be doing to influence this?*

20. The UK has taken a leadership position and this should be maintained. Government should now continue to support the future of the EU ETS by working hard at an EU level to improve harmonisation and transparency. The UK must also seek to encourage participation from all countries in the development of a post Kyoto agreement. Whilst we understand that Phase III of the EU ETS can proceed in the absence of a Kyoto type agreement, achievement of an international agreement for CO_2 reduction post 2012 will provide solid foundations for a third phase of the EU ETS.

21. The European Commission should be encouraged to provide a greater level of detail concerning what actually constitutes an acceptable National Allocation Plan. There also needs to be greater clarity about the extent to which other climate change policies are being utilised to meet the emissions reduction targets of other Member States as specified by the burden sharing agreement. In general there is a requirement for a far greater level of transparency, which would in itself enable the Commission to take a firmer line when determining and enforcing National Allocation Plans.

22. The UK Government should also continue to assist with the development of EU guidance to ensure that the trading scheme delivers its stated objectives. One such example has been the recent hesitancy in the EU to acknowledge the requirement for Monitoring and Reporting Guidelines for Carbon Capture and Storage (CCS) plant. Investment in such projects is to a large extent driven by the EU ETS and yet the regulatory uncertainty witnessed in recent months only serves to reduce the likelihood of these investments, which is obviously to the detriment the scheme.

(x) *How well integrated are the ETS and other EU climate change policies?*

23. Whilst there are a range of EU climate change policies, it is clear that the EU ETS has received the most emphasis and is being used as the primary climate change policy tool. It is imperative that climate change policy affecting sectors not currently covered by the EU ETS is strengthened so that they can begin to contribute proportionately to reduced carbon emissions.

(xi) *What work needs to be done now to help design a third phase of the EU ETS? How can the experience of the EU ETS be used to help the design of a post-2012 Kyoto mechanism?*

24. There is significant international divergence regarding the best way to tackle climate change. Predominantly this is characterised by two positions; a solution utilising a cap and trade system and one which favours partnerships and technological investment. If an international agreement is to be reached it is likely that a post Kyoto mechanism will require some aspects of each approach.

25. It is likely to be the post Kyoto mechanism which influences the design of Phase III rather than the other way around. If international agreement is reached on a CO_2 reduction framework this will, to a great extent, determine the structure of the future phases of the EU ETS. With this in mind we believe that the EU ETS must have a strong flexible mechanism such that it can be harmonised with alternative emissions reduction schemes which may develop post 2012.

October 2006

Memorandum submitted by the Manchester Airports Group

The Manchester Airports Group (MAG) responded to the Environmental Audit Committee's inquiry, *Reducing carbon emissions from Transport*, earlier this year. Representatives from MAG appeared before the Committee in July to give further evidence.

The following comments build upon MAG's previous evidence to the committee. In making these comments, we have limited our response to part 1 of question 8: How should aviation be included within the ETS?

MAG has lobbied the Government and EU institutions for the inclusion of aviation into the European Emissions Trading Scheme (ETS). We believe that aviation should be included in the scheme at the earliest opportunity.

MAG supports an ETS based on the inclusion of CO_2 only, with appropriate flanking instruments to tackle other pollutants. We favour open trading with other industries, so that aviation could buy and sell allowances on the full open EU market. We believe that, in principle, it should not matter who causes the emissions (and buys permits) as long as total emissions are kept within the cap. An open market is also likely to deliver the most cost-effective emissions reductions. This is because other sectors are better placed than aviation to cut their emissions.

We accept that the climate change impact of aviation emissions go beyond $C0_2$ and would support the introduction of measures to deal with other gases at a later stage, subject to the strength of scientific evidence and the inclusion of other industries too.

Aviation is an international business, and a global scheme for trading emissions would be the ideal mechanism for addressing carbon emissions. While international agreement is unlikely in the short term, we believe that Europe could take a lead in tackling emissions from intra-EU flights.

October 2006

Memorandum submitted by MINESCO

We refer to the above enquiry and would like to submit the following comments from the Mineral Wool Insulation sector for consideration. By way of background Minesco represents all the UK manufacturers of Mineral Wool insulation for Climate Change Agreement (CCA) and EU Emissions Trading Scheme (EUETS) purposes.

1. Mineral Wool insulation is central to many Government initiatives aimed at alleviating Climate Change and combating Fuel Poverty, and, perhaps uniquely, contributes to three of the four Energy Review goals. In terms of carbon emissions, Mineral Wool saves many times more emissions in use than are emitted in manufacture.

We therefore suspect that there is an inevitable tension between implementing policies that are intended to address Climate Change, and potentially constraining investment in the very industries that are part of the solution by creating additional investment risk.

2. Our second observation relates to the emergence of an increasing variety of "flavours" of carbon, many of which are not fungible or only partially so, and all of which have there own market fundamentals, and hence prices. For example, UK ETS allowances currently trade at circa £2 per tonne, whilst Phase I EU allowances are near €14 and Phase II €16. In the case of the various Kyoto and flexibility mechanism credits, use for EUETS compliance is constrained, but different banking rules and political and technical risk profiles mean that prices again differ.

For Phase II of the EUETS all members of the sector will be covered by both CCA's and the EUETS, and, assuming the proposed Energy Performance Commitment is adopted, will likely also have operations within the scope of this scheme.

The net result is therefore that it is highly likely that they will have to manage positions in at least four flavours of carbon, and could simultaneously be long and short carbon under different schemes. Apart from the risk management complexities this introduces, the potential confusion cannot be helpful in ensuring that a simple cost of carbon emerges against which to assess policies or in developing a clear CCP communications message.

3. A further issue relates to the interaction between overlapping schemes, and mechanisms introduced to avoid double benefit or jeopardy. In the case of Phase I of the EUETS, the complexity of disaggregating existing CCA targets into that covered by the EUETS and that not resulted in development of a crude Double Counting mechanism intended to avoid this by adjusting CCA targets for EUETS performance.

However this does introduce additional complexity and compliance risks, and logically the obvious solution would be to allow EUETS participation to confer access to CCL rebate under the same terms as the CCA's, such that dual regulation was avoided entirely.

As the UK's transposition of the Energy Products Directive the CCL package imposes minimum levels of taxation on energy products. Relief of up to 100% is allowed for energy intensive industries, provided, that they are covered by agreements such as the CCA's, tradable permit schemes such as the EUETS or equivalent measures. The legislative issues with this approach are therefore;

- Whether CCL rebate could be provided on unconstrained indirect emissions (ie electricity).
- Whether CCL rebate could be provided for part of the installation not covered by the EUETS (ie 90/10 and Directly Associated Activities).

The solution to the second problem could be that the full 100% rebate be allowed on the EUETS installation, rather than the current 80% on the whole. However, this leaves the problem of indirect emissions, as even if the interpretation of the Directive was that as electricity generation is covered by the EUETS so electricity use is constrained by cost pass through, our understanding is that Government policy is not to allow unconstrained energy use. We do not therefore have a "silver bullet" solution, but we do believe that this issues needs to be addressed.

4. Our final point relates to the treatment of small emitters. Whilst in order to address concerns raised in Phase I a de-minimis limit is being contemplated for Phase II, this only applies to combustion activities. Therefore small emitters carrying out other activities are subject to broadly the same Monitoring, Reporting and Verification burdens as larger concerns.

Additionally, although recovery of administration costs by the Competent Authority (Environment Agency & SEPA) is based on tiered charges, the cost of regulation per tonne of Carbon is significantly higher for smaller emitters.

We considered this question in relation to a Consultation on the subsistence charges and illustrated this point with the example that the smallest emitters were burdened by charges 100 times higher per tonne of Carbon that the largest emitters (assuming 20% opt out):

Charging Band	*Average tCO_2 pa*	*Proposed Charge*	*Charge/t CO_2*
Band A	14,522	£1,900	£0.13
Band B	155,630	£2,530	£0.016
Band C	2,371,400	£3,170	£0.0013

October 2006

Memorandum submitted by the Office of Gas and Electricity Markets (Ofgem)

1. Ofgem is the regulator of gas and electricity industries in Britain. Ofgem's principal objective is to protect the interests of present and future gas and electricity consumers, where appropriate by promoting effective competition. We also have important duties relating to the environment, sustainable development and security of supply. Ofgem welcomes the opportunity to respond to this inquiry on lessons learned from Phase 1 of the European Emissions Trading Scheme (EU ETS). The timing of the inquiry is particularly appropriate as the European Commission starts its review of the EU ETS Directive.

2. Tackling climate change is one of the most challenging and important issues of the 21st century. However, the costs associated with achieving cuts in greenhouse gas emissions are significant and it is therefore important to find the most effective means. We support using broad-based economic instruments as the most cost-effective way of meeting environmental challenges and the EU ETS should be the main policy tool to reduce UK emissions. Our view is that the EU ETS has the advantage of focusing on the desired outcome, in this case reducing greenhouse gas emissions, while allowing the market to find the most cost-effective abatement options and technologies. Such schemes are preferable to environmental taxes because the uncertainty about the effects of climate change and the costs of abatement makes it difficult to decide at what level to set such a tax. Frequent adjustments to the level of the tax would create further uncertainty and undermine long-term incentives. A trading scheme, however, reveals the cost of abatement through the allowance price. If the cost turns out to be lower than expected, governments or other agencies can buy allowances from the market and retire them in order to cut emissions even further.

LESSONS FROM PHASE 1

3. As a flexible, market-based instrument, the EU ETS should lead to emissions reductions at lower costs than alternative policy measures without distorting competition in the UK's energy markets. Phase 1 was intended to be a "learning by doing" phase so it is vital that the experience gained is used to establish an effective scheme if the substantial cuts in greenhouse gas emissions envisaged by the government are to be achieved.

4. A number of positive features have emerged from phase 1 of the ETS. Most importantly it has been demonstrated that it is possible to establish a large scale emissions trading scheme across international borders and covering a wide range of industrial sectors. This has been achieved in a relatively short period of time and the regulatory frameworks and market infrastructure are now well established. Trading by many of the parties covered by the scheme, particularly the electricity generation sector, has become part of the day-to-day activity.

5. However, experience from the first phase also suggests that there are a number of features that could be improved in order to make the scheme more efficient and effective. For the EU ETS to deliver its maximum potential, the scheme should provide clear long-term signals, allocate allowances through an auctioning system and be broadened in scope. In particular:

- greater harmonisation of targets and allocation methodologies is likely to result in a more robust and efficient scheme;
- long-term targets should be set to provide the long-term certainty needed to secure investment in low carbon technologies;
- accurate and timely information on actual emissions should be made available to market participants to reduce price volatility in the allowance market; and
- the scheme should have the broadest possible coverage so that abatement occurs at the lowest possible cost across the economy as whole.

Long-Term Uncertainty

6. The most serious problem with EU ETS in its existing form is the lack of long-term certainty, which may prevent investment in long-term carbon abatement technologies and means that the most cost-effective abatement options may not be exploited. This uncertainty derives from:

- the five-year phases, with a new cap set only 18 months in advance of the start of each phase;
- the cap being set by the aggregate of the National Allocation Plans (NAPs) of 25 Member states rather than centrally;
- the scheme being relatively new and a number of the features evolving, eg definitions, coverage, market arrangements, and how it links with the flexible mechanisms under the Kyoto Protocol; and
- the uncertain political environment, ie the Kyoto protocol and the lack of a successor agreement from 2013.

7. The short-term nature of the targets creates uncertainty that may result in pursuing abatement options which are more expensive than necessary. Long-term abatement options are likely to require substantial capital investment which may only provide sufficient return if carbon dioxide emissions are valued over the lifetime of the investment. In the absence of long-term abatement targets, investors may be unwilling to commit the required capital as the return is too uncertain. As a result, the only abatement options which are available are short-run options such as fuel switching or reducing production.

8. This could be addressed by providing greater certainty through long-term targets. For example, a ten year phase, perhaps combined with earlier submission of National Allocation Plans (NAPs), so that targets were known further in advance of the start of the phase, could provide up to 13 years of certainty compared to the current maximum 6.5 years. Alternatively, the NAPs could include rolling caps covering two or more phases. Another alternative would be for a political agreement to set out the future cap for the EU as a whole with distribution of the cap among Member States left for more detailed future negotiation.

9. Increasing the certainty of the scheme will require co-ordinated action, preferably across all Member States. Although the UK is a relatively large participant in the CO2 market, accounting for 11.2% of allowances allocated during Phase 1, this is not a sufficient proportion of the market to provide certainty about the overall supply of allowances.

Scheme Coverage

10. The scheme currently covers major stationary sources of emissions but leaves out some other key sectors which contribute significantly to emissions, including aviation and surface transport. The absence of these and other sectors means that abatement may not be occurring at the lowest possible cost across the economy as a whole. Member States are able unilaterally to opt in additional sectors and gases, subject to approval by the Commission. However, it is likely that competitiveness concerns associated with including additional sectors means that coordinated action would be required. We note that the UK government has expanded the scope of the scheme to include emissions in some sectors for the first time and to expand the coverage in others. Affected sectors are glass; mineral wool; gypsum; flaring from off shore oil and gas production; petrochemicals (crackers); carbon black and integrated steel works. We welcome this expansion. Proposals are also under discussion for the inclusion of aviation in the scheme in the future. Further expansion of the scheme to cover other significant sectors would provide greater benefits to the functioning of the scheme.

Allocation of Allowances

11. Although the free allocation of allowances, which was required by the EU ETS Directive in the first two phases of the scheme should not affect the overall efficiency of the scheme, it can create substantial distributional impacts. It potentially creates windfall profits in some sectors, notably electricity generation. Only a small number of Member States opted to allocate a proportion of allowances through auctioning in the first phase and only at a very low level. In the recently published NAP for phase 2, the UK government announced that a minimum of 7% of allowances would be auctioned. We welcome this proposal to gain experience of the use of auctioning as an allocation methodology and would urge the government to increase use of auctioning in future phases. Full auctioning of allowances would be the most efficient mechanism for allocation and would reduce the administrative burden of developing and implementing a methodology for free allocation.

Treatment of New Entrants and Closures

12. The new entry and closure regimes that are currently in place in most Member States may further distort the incentives of the scheme. Closure of old, inefficient installations should be recognised as a valid way of reducing emissions and should not be discouraged. A requirement to forgo allocated allowances on closure means that operators have an incentive to keep installations open, even if they are only operating at very minimal levels, in order to retain access to a future allocation of allowances. The government has

argued that this is beneficial for security of supply as it maintains generation capacity on the system. However, the existence of surplus capacity may distort electricity prices and reduce the incentive for new capacity to be brought on to the system. If the old capacity is unwilling or not actually capable of running beyond minimal levels, this may actually increase the risk of supply interruptions at peak times.

13. The existing practice in most Member States provides an allocation of free allowances to new installations which come within the boundaries of the scheme. This essentially acts as a subsidy to investment in new sources of carbon dioxide emissions and may result in over-investment in carbon intensive technologies and reduced investment in low-carbon technologies. This is exacerbated by the lack of long-term targets discussed above. Facing uncertainty about whether or not a carbon price will exist in the future, investors may opt to invest in lower cost fossil based technologies, knowing that in the short-term they will receive a free allocation of allowances.

Linking with Other Schemes, Including the Clean Development Mechanism

14. The Directive currently requires Members States to specify a limit on the number of Clean Development Mechanism (CDM) credits that installations can use to comply with their obligations under the EU ETS. The UK has set this limit at 8% for most UK installations and 9.3% for the large electricity producers.

15. Limiting the number of CDM credits that installations can use for compliance reduces the efficiency of the scheme and raises the cost of meeting the targets. Greenhouse gases are a global pollutant and so the location of emissions, and hence the location of emission reductions, does not change the impact. Our view is that there should be no limit on the use of Certified Emissions Reductions (CER), or other types of credits. However, we recognise that this is a decision for government taking into account all of the relevant factors, including the issue of supplementarity.

Competitiveness Issues

16. The committee has raised a number of questions regarding the competitiveness of European industry. This is not an issue for electricity generation because of the limited extent of competition from outside Europe. However we recognise that it is an issue that may need to be addressed. However, in the longer term the best way to address competitiveness issues to expand the coverage of emissions trading in terms of sectors and geographically. This will require international action involving the EU and the UK government at the highest level.

Next Steps

17. Many of the lessons learned from Phase 1 of the scheme can be resolved with adjustments to the design of the scheme. Some of the proposals may require changes to the Directive. The Commission's current review of the Directive provides an opportunity for adapting the scheme to improve its efficiency and effectiveness. We urge the Government to make maximum use of this opportunity. Other elements could be implemented by Member States on a unilateral basis, although this may raise other issues in relation to competitiveness and consistency of the scheme across the EU. In our response to the government's consultation on energy policy1, we set out our views on alternative policies that the UK government could implement alongside the EU ETS if the government decides that it is necessary to provide greater certainty for investment in the UK.

October 2006

Memorandum submitted by SBAC

SBAC is the national trade association representing with its regional partners 2,600 companies operating in the UK supplying the air transport, aerospace defence, homeland security and space markets. The Emissions trading scheme applies to sites with thermal equipment with a capacity of greater than 20MW. Four of SBAC's members were affected by Phase 1 of the Emissions Trading scheme.

1. What are the Key Lessons to Learn from Phase I of the Scheme?

1.1 Aerospace members are not heavy consumers of energy in comparative terms and due to their proactive environmental strategies many sites have seen highly efficient environmental systems introduced ahead of the emissions trading scheme. The margin for achieving additional improvements is therefore limited, although industry remains committed to finding savings where possible.

1.2 The Engineering and Vehicles sector comprises 0.1% of total emissions in the UK. In Phase 1, aerospace and defence companies that were not part of the Climate Change Agreement scheme were placed in the Non Climate Change Agreement Engineering and Vehicles sector.

1.3 The overriding experience of members in Phase 1 has been negative. This is due to a miscalculation in the allocation that the sector received, which left many of our members with an allocation 50% below their 2003 baseline emissions. This followed a provisional National Allocation Plan which identified aerospace installations within a broader Vehicles and Engineering sector. The provisional plan indicated that aerospace installations would receive carbon allocations around 85 to 95% of their 2003 baseline emissions.

1.4 SBAC contacted DEFRA officials in attempt to resolve the allocation shortfall.DEFRA have acknowledged that it was not their intention to so dramatically under allocate and regard the outcome as an anomaly. They were however unable to change the allocation as the National Allocation Plan had been approved by the European Commission.

1.5 With the first year of reporting already undertaken SBAC is aware that aerospace companies have incurred significant additional costs in order to cover the shortfall in the allocations that they received. For companies facing intense global competition this is unwelcome and could impact on future investment decisions. In addition, a Combined Heat and Power unit has been, at least temporarily, shut down to achieve a reduction in energy consumption and so meet with the shortfall in the allocation. This is an unfortunate outcome of Phase 1, since it is government policy to encourage companies to invest in CHP sites.

1.6 SBAC believes that there was insufficient flexibility in the methodology developed by DEFRA to enable officials to respond to this problem that arose once the final plan was published.

2. How Likely is it that UK Firms Would Successfully Reduce Emissions by at Least 7MtC by 2012, in Line with the Proposed Phase II NAP?

2.1 The main driver for reducing emissions is to mitigate the impact of high energy costs; this is likely to be accentuated in the aerospace sector where increasing demand and more energy intensive processes are set to increase energy costs. The EU ETS provides a marginal incentive to reduce emissions, due in part to the arbitrary allocation process and less rigorous implementation in other EU member states.

3. What Have Been the Effects of the Method Chosen for Allocating Allowances in Phase I?

3.1 Allocations to aerospace and defence companies in Phase 1 were based on Climate Change Agreement (CCA) targets for those who were part of the CCA initiative. A general growth factor derived from ONS statistics (Office for National Statistics) was used to calculate an allocation for the Non CCA Engineering and Vehicles sector.

3.2 The aerospace industry, as part of the larger vehicles & engineering sector, suffered because forecast energy use did not reflect the specific circumstances of the industry. In addition, a decision to allocate allowances to later entrants before incumbents had a significantly adverse impact on aerospace and automotive sites as over half the allocation was apportioned to two sites. This resulted in other companies receiving an allocation 50% below levels required.

3.3 The use of historic energy consumption does not take into account the changes in processes and techniques that are occurring in manufacturing. For example, the introduction of composite materials in the manufacture of air frames and wings. New composites are far lighter than conventional materials and contribute to the production of more fuel efficient aircraft. The manufacture of composites requires greater energy intensive processes in the manufacturing stage. The estimated value for the production of 1kg of material for composite is 326MJ in contrast to aluminium which is 56MJ.

4. Has the Government Identified the Correct Proportion of Allowances to be Auctioned in Phase II? Should These be Drawn Solely From the Power Sector's Allocation? What Will the Effect of this Auctioning be on Industry and the Price of Carbon?

4.1 If UK proposals proceed the UK will be amongst the countries in Europe with the highest proportion of auctioned credits. Germany, Italy and Spain have indicated that auctioning will not be used in Phase 2, Poland has indicated that it may auction 1% of the total cap.[22] The UK intends to auction 7% of credits which will be sourced from the power generation sector.

4.2 It is reasonable to assume that removing credits from power generators will result in additional costs that will be passed on to consumers including aerospace and defence manufacturers, placing them at a competitive disadvantage. The greater quantity of credits to be auctioned in the UK may, depending on the caps established in other EU states, encourage companies outside UK to bid for credits which will increase costs. The UK should seek to act in greater harmony with other EU nations and work to achieve a closer consensus on areas of the scheme that effect UK competitiveness, such as auctioning.

[22] WWF analysis of NAPs for ETS Phase 2.

5. What have Been the Effects of Phase I so far on the Competitiveness of (1) Business in the UK, and (2) Business Across the EU?

5.1 (1) UK aerospace and defence companies have been placed at a competitive disadvantage as a result of a 50% under allocation of emissions permits in Phase 1 of the emissions trading scheme.

6. What are the Key Issues for Phase II in Terms of Ensuring that Emissions Reductions from EU States are not Cancelled Out by the Transferring of Industry to Developing Economies?

6.1 For aerospace, the key issues are to ensure that the allocation methodology better reflects the potential to reduce emissions at each site and to achieve greater uniformity across the regimes operating within the EU.

6.3 There are significant cost pressures on manufacturers and, in a global economy, increasing opportunities to shift production across a number of potential locations. All policies that increase the cost of operating within the EU encourage these opportunities to be more vigorously pursued.

8. How Should Aviation be Included Within the ETS? What are the Latest Indications of When it Will be Included?

8.1 SBAC supports the inclusion of aviation in the Emissions Trading Scheme. As part of "Sustainable Aviation", UK aerospace companies have committed to working with government to identify practical solutions for advancing the inclusion of aviation in the EU emissions trading scheme. Furthermore, the UK aviation industry is committed to the International Civil Aviation Organization (ICAO) and the United National Framework Convention on Climate Change (UNFCC) processes to resolve practical issues at the international level, including agreeing a unified allocation methodology for aircraft emissions that maintain the global competitiveness of the industry by ensuring consistent treatment of aviation across States.

10. How Well Integrated are the ETS and Other EU Climate Change Policies?

10.1 ETS and other climate change policies form a small part of the aviation industry's commitment and resources that are focused on reducing its impact on the environment. Through a pioneering initiative launched last year called, Sustainable Aviation, UK companies have committed to a joint strategy aimed at delivering radical cuts in carbon dioxide emissions, nitrogen oxide emissions and aircraft noise over the next 15 years.

10.2 Sustainable Aviation is a comprehensive programme for achieving long-term reductions in the impact of aviation on the environment and is a joint initiative between Britain's leading airlines, airports, aerospace manufacturer and air traffic controllers.

10.3 Amongst the 33 commitments set out in the document, the key priorities include:

10.3a Limiting climate change impact by improving fuel efficiency and CO_2 emissions by 50% per seat kilometre by 2020 compared with 2000 levels;

10.3b Improving air quality by reducing nitrogen oxide emissions by 80% over the same period;

10.3c Lowering the perceived external noise of new aircraft by 50% by 2020 compared with their 2000 equivalents;

10.3d Establishing a common system for the reporting of total CO_2 emissions and fleet fuel efficiency by the end of 2005, and pressing for aviation's inclusion in the EU emissions trading scheme at the earliest possible date;

10.3e Airport plans for community-related noise limitations, including landing and take-off restrictions where necessary.

10.4 Delivering these objectives requires the continued focus of the entire aviation industry. The government has a supporting role to play by ensuring that the framework exists to enable a successful and competitive industry is able to deliver on these commitments. Investment in research and technology is crucial to delivering targeted funding support on new technologies that improve the environmental performance of aviation.

10.5 Environmental and climate change policies are an important signal that demonstrates what society and governments wish to achieve. It is through the innovation and research of successful industries that the technology that actually delivers environmental improvements will be derived. One such project is already underway, the Environmentally Friendly Engine project a joint research project lead by Rolls-Royce and including Goodrich, Bombardier Aerospace, Smiths Aerospace and HS Marston and six universities including Queens Belfast, Loughborough, Oxford, Cambridge, Sheffield and Birmingham), is a crucial programme to reducing carbon and nitrogen oxide emissions. The EFE project is a critical part of the UK National Aerospace Technology Strategy and will provide the validation route for future generations of

improved gas turbines systems. It will enable the pull through of technology from the UK science and engineering base and ensure that the integrated and optimised operation of a range of new technologies is validated ahead of their introduction into production vehicles in the 2012–15 timescale.

11. What Work Needs to be Done Now to Help Design a Third Phase of the EU ETS? How Can the Experience of the EU ETS be Used to Help the Design of a Post-2012 Kyoto Mechanism?

11.1 In taking forward a third phase of the EU ETS it is essential that there is greater consistency across EU member states on both targets and methodologies used to apportion credits. There will also need to be recognition of specific sectoral changes and challenges. The increased use of composite material will make a significant contribution to improving the fuel efficiency of aircraft and minimising carbon emissions from aviation. The use of composites will also increase the energy intensity of manufacture. In phase III it will be essential to derive an approach that properly reflects this trade-offs and ensures that credits are allocated appropriately.

12. Concluding Remarks

12.1 Aerospace companies remain committed to improving the environmental performance of their products and processes. Working with airlines, airports and air traffic services the sector has produced "Sustainable Aviation", a long-term strategy that balances the needs of the environment, with economic growth and social responsibilities. The strategy is a world first for the aviation industry and signals the UK aviation industry's determination to address public concerns.

12.2 UK aerospace companies were unfairly penalised in Phase 1 of the emissions trading scheme, by receiving an allocation 50% below levels required. This occurred as a result of the methodology used by DEFRA to allocate permits. In addition, once the national allocation plan had been approved by the Commission there appeared to be no mechanism by which DEFRA could correct this situation. Aerospace is a highly successful and global industry in which competitiveness is key. Additional costs imposed upon one of the UK's most successful areas of manufacturing without a remedy to rectify the situation is concerning.

September 2006

Memorandum submitted by ScottishPower

Background on ScottishPower

ScottishPower welcomes the opportunity to contribute to the Environmental Audit Committee's inquiry. As one of the UK's largest energy companies, we are pleased to offer our views on the issues identified by the Committee.

These views are based on our practical commercial experience across the energy supply chain, including generation, transmission and distribution, and supply. In the UK, ScottishPower:

- operates some 6,200 MW of generating capacity, from a diverse portfolio of thermal electric, hydroelectric, renewables and CHP sources;
- is the 3rd-largest distribution company, owning, maintaining and developing large power transmission and distribution networks;
- supplies energy and energy services to more than five million domestic customers; and
- is one of the leading developers of wind power, with 344MW of onshore wind currently operational with a further 434MW under construction or consented. We recently completed the extension to our Black Law windfarm, which makes it the largest in the UK. We have also received consent for our Whitelee windfarm, which will be the largest in Western Europe.

Meeting the Government's 1997 manifesto commitment of 20% reduction in CO_2 from 1990 levels by 2020 will require significant investment in lower carbon plant. In meeting this challenge ScottishPower plans to invest in a further 1,000 MW of renewable energy. We are also investing more than £170 million in Flue Gas Desulphurisation (FGD) at our 2,400MW coal-fired plant to reduce the level of sulphur dioxide emissions. With substantial coal-fired and gas-fired generation assets, we believe there may be opportunities to develop and apply carbon capture and storage technologies in the UK.

Our industry and commercial experience gives us a valuable perspective on the impact of the EU ETS on the energy sector, and we hope this perspective and our views on the key questions identified for the inquiry are of interest to the Committee.

1. *What are the key lessons to learn from Phase I of the Scheme?*

Although electricity producers expect to contribute significantly towards meeting greenhouse gas targets, they are expected to bear a disproportionate share of the burden of CO_2 reductions in Phases 1 and 2. The Government's aspirations and targets cannot be achieved without other industrial sectors, transport and the heat market, making a significant contribution. Figure 1 in the Annex illustrates that if generators are to bear all of the CO_2 reductions to meet the trajectory set out in the 2003 Energy White Paper, then the industry would have to be carbon-free by 2020. Other sectors must contribute to reductions.

2. *How likely is it that UK firms would successfully reduce emissions by at least 7MtC by 2012, in line with the proposed Phase II NAP?*

It is commonly believed that replacing coal-fired generation with gas-fired generation (fuel switching) has the greatest potential to deliver carbon savings. Coal-fired generation produces circa 1tCO_2 per MWh of electricity whereas gas-fired generation only produces circa 0.4tCO_2 per MWh of electricity.

Assuming that all the 7MtC reduction comes from fuel switching in the power generation sector, we would need 8GW of new CCGT capacity. This 8GW of new CCGT capacity would have to be built by the start of Phase II and fully operational for the whole of Phase II to deliver this level of CO_2 reduction—this is clearly not possible. To meet the Phase II cap, other industries will have to reduce emissions and generators will continue to purchase allowances from other EU ETS participants and from CDM/JI projects in order to comply.

3. *What have been the effects of the method chosen for allocating allowances in Phase I?*

In Phase I, allocations to each sector were based on business-as-usual projections, with the exception of the Power Sector, which was charged with delivering the Government's chosen reduction target and therefore received less than business-as-usual.

Following the deadline for 2005 verified emissions, DEFRA published a table (see Figure 2 in the Annex) showing the breakdown by sector of the UK's emissions. As can be seen, "Power Stations" had a shortfall of 21.2%. All other sectors had a surplus, as high as 59.7%. On the basis of this evidence, allocations to other sectors should also have been reduced as the actual allocations to these sectors resulted in surpluses. Without a reduction in the allocations to other UK sectors in Phase II, the UK is very likely to see a repetition of the surpluses seen in 2005.

4. *Has the Government identified the correct proportion of allowances to be auctioned in Phase II? Should these be drawn solely from the power sector's allocation? What will the effect of this auctioning be on industry and the price of carbon?*

The UK Government has set a very ambitious level of auctioning in Phase II of the EU ETS but has yet to indicate in detail how the revenues from this will be used. We welcomed the UK Government's formation of the Environmental Transformation Fund (ETF), which will be funded from the auction revenues and be used to support investment in renewable or low carbon projects. We have concerns that some of the auction revenues may not be directed to the fund and there is potential for some of the revenues may be retained by Treasury for other purposes.

As the Large Electricity Producers will contribute all the allowances for auctioning in Phase II, the ETF should fund renewable or low carbon power generation projects only and act as the necessary stimulus to move from a CO_2 intensive UK generation fleet to a less CO_2 intensive fleet.

The ambitious level of auctioning should not be drawn solely from the Large Electricity Producer sector as it fails to stimulate action from other industries where savings could be made more economically. If all participants are faced with a reduction target, this will ensure that maximum attention is given to delivering CO_2 savings. Competitiveness issues which have heavily influenced the choice of allocation in phases 1&2 need to be fully understood and quantified at an EU level, as firm evidence is lacking at present.

The higher carbon costs associated with the UK's ambitious auctioning targets, which were levied on the Large Electricity Producer sector, will ultimately be borne through the wholesale power pricing mechanism, thus directly affecting other sectors of the economy.

5. *What have been the effects of Phase I so far on the competitiveness of (1) business in the UK, and (2) business across the EU?*

The UK Government has an ambition to set the scene for the rest of Europe in terms of combating climate change. However the UK contributes only circa 2% of global greenhouse gas emissions and the UK needs to consider the impact of unilateral action on British industry, especially if the rest of Europe fails to follow.

In Phase I the UK set an ambitious reduction target and the rest of Europe did not follow suit, resulting in UK industry (in particular the UK power sector) facing higher shortfalls than the rest of Europe. Based on the Phase II NAPs to date, it again appears that the UK has gone out on a limb and it remains to be seen if other Member States will follow. The higher cost of carbon associated with the UK's ambitious targets (which have been levied on the Large Electricity Producers) will ultimately be borne through the wholesale power pricing mechanism, thus directly affecting other sectors of the economy.

The UK Government should ensure that it is not acting unilaterally to deliver an ambitious shortfall, as all UK industry will suffer as a consequence compared to the rest of Europe. The burden of reduction targets should be split equitably across the EU Member States.

6. *What are the key issues for Phase II in terms of ensuring that emissions reductions from EU states are not cancelled out by the transferring of industry to developing economies?*

Global warming is a global trans-boundary problem and action taken in any part of the globe to reduce emissions will help combat this. Emissions reductions on a domestic basis can contribute towards the reduction of global greenhouse gas emissions but it may be more economically beneficial to reduce emissions elsewhere. If the UK or other Member States continue to focus on domestic action without considering the wider economic picture, emissions reduction will cost more than is necessary and this may lead to the transfer of industry to developing economies.

There needs to be flexibility through the use of JI/CDM credits and an acceptance that achieving the UK domestic target may not be the most economically efficient way to deliver reductions in global greenhouse gases.

There is undoubtedly a strong demand from other parts of the world to reduce reliance on fossil forms of energy and at the same time efforts to establish JI/CDM combat poverty and allow common but differentiated responsibilities to be recognised globally.

7. *How well are the EU ETS and the Clean Development Mechanism working together? What needs to be done to better integrate these markets? Is the CDM funding the right projects?*

A recent UNFCCC Secretariat press release reported that there could be up to 1 billion credits from CDM projects in the pipeline by 2012. There are therefore significant project credits available for delivering the most economically efficient compliance with the targets in the EU ETS.

In Phase I there was no requirement for a limit on the use of JI/CDM credits, unlike Phase II. In Phase II Member States have adopted different caps for CDM/JI and Figure 3 in the Annex demonstrates that other Member States have indicated caps as high as 50% but the UK's cap is significantly lower at 9.3% for the Large Electricity Producers (8% for other sectors), compared to an EU average of 19% (more than double).

The limited UK caps on CDM/JI leads to an increase in the average cost of compliance for UK industries, compared to similar industries in other Member States. In addition, the limited caps will encourage arbitrage of project credits by companies in other Member States where caps are much less restrictive, which could potentially allow foreign-owned generators to cross-subsidise their operations to the detriment of locally owned generators. This will inevitably lead to increases in the effective cost of CDM/JI credits for UK participants. It will weaken the efficient functioning of the Scheme and will increase the overall compliance cost to UK installations.

8. *How should aviation be included within the ETS? What are the latest indications of when it will be included?*

Additional gases/sectors should be included where their inclusion results in a material increase in emissions coverage. For example, aviation and transport should be included as major contributors of CO_2 emissions in the EU. Forestry (deforestation) should also be included in a global market as the second largest contributor of global CO_2 emissions.

Additional gases should only be included after monitoring and reporting methodologies are established. The integrity of the scheme is paramount and the inclusion of other greenhouse gases with high global warming potentials (many times higher than CO_2) requires rigorous monitoring and reporting methodologies.

Expansion to other sectors/gases should not undermine the existing scheme as a basis for investment.

9. *The Environment Secretary has said: "we will support the Commission in its efforts to enforce tough caps". What exactly should the Government be doing to influence this?*

After the end of 2005 the Commission provided analysis of EU-wide 2005 verified emissions compared to Phase I average allocation in each Member State (see Figure 4 in Annex). The data shows that only five Member States had a deficit of allowances (compared to actual emissions) and of these, the UK had the highest deficit. All other States had a surplus of allocations and the key reason for this was the combination of high projected emissions and targets that lacked ambition.

In Phase II, allocations in all Member States must be closely related to the respective 2005 verified emissions to ensure integrity of the scheme in Phase II. The 2005 verified data is the only data set we have that exactly mirrors the scope of the EU ETS and is the best yard-stick we have for business-as-usual emissions.

It is also important to note the integrity that comes with the 2005 verified data, as it is not subject to industry lobbying in the same manner that projections can be. Projections are highly subjective and most industries tend to have an optimistic view of future production levels and growth in their sector, which does not often transpire in reality.

The Commission must enforce its guidance for Phase II and ensure adherence to the requirement for allocation in Phase II to reflect 2005 emissions. The UK Government should maintain their scrutiny of the other Member State NAPs but could benefit from sharing these NAPs with UK industry to get their expert input on specific sectors.

10. *How well integrated are the ETS and other EU climate change policies?*

Within the UK, there is a reasonably good integration between the EU ETS and other climate change policies. This has occurred via the development of the Climate Change Programme, most recently revised during 2005.

This integration must be strengthened especially if the Government propose the inclusion of aviation and surface transport within the EU ETS. This process can be helped with improved transparency/disclosure of emission forecasts, a better understanding of the supply/demand side policy outcomes and an avoidance of potential double counting of emissions.

For all EU Member States, care must also be taken to ensure that there is a proper integration and scrutiny of climate policy and that the realistic and achievable policy reductions from the EU ETS are based upon similar assumptions as the expected reductions from the non-traded sectors. It is not feasible for the EU ETS element of climate programmes to be set to develop a surplus of allowances for any sector, at the same time as developing policy in the non-traded sector to have unrealisable policy targets. A proper balance must be struck.

11. *What work needs to be done now to help design a third phase of the EU ETS? How can the experience of the EU ETS be used to help the design of a post-2012 Kyoto mechanism?*

If our industry is to maintain security of electricity supply, promote the development of a diverse generating portfolio and move towards the installation of lower carbon technologies we require a stable and transparent long-term framework for new investment. It is vital for investment decisions in low/zero carbon technologies with long development lead-times and long life cycles that a robust carbon pricing mechanism is in place to compliment these long timescales.

We see the following themes as being the priorities for the design of the scheme post-2012:

Expand the EU ETS to include additional greenhouse gases and new sectors:

— Additional gases should be included after monitoring and reporting methodologies are established and additional gases/sectors should be included where inclusion results in a material increase in emissions coverage. For example, the Transport and Forestry (deforestation) sectors should be included as major contributors of worldwide greenhouse gas emissions. Expansion to other sectors/gases should not undermine the existing scheme as a basis for investment.

Clear, long-term emission reduction targets should be established to build investor confidence:

— EU-wide (and global) targets should be clearly established to at least 2030, to compliment long investment life cycles. A clear framework and reduction trajectory should also be determined which enables the targets to be met. Transparency of these elements will enable an efficient market where investment can be made.

All emissions sectors should contribute to delivering the reduction targets:

— If all participants are faced with a reduction target this will ensure that maximum attention is given to delivering CO_2 savings. Competitiveness issues which have heavily influenced allocation in phases 1&2 need to be fully understood and evidenced at an EU level. Harmonisation of reduction targets at the EU level can then be applied across all EU emissions sectors to ensure a level playing field.

Harmonisation of key rules of the scheme across the EU will minimise anti-competitive issues:

— In particular harmonisation of the rules relating to; benchmarks for allocation, the percentage of auctioning, the rules for plant closure and new entry and the caps on the use of CDM/JI credits, to ensure market distortions across the EU can be avoided.

Longer allocation periods to support new investment:

— Allocation periods should reflect the life-time of new investments in each sector. Allocation periods for new entry should be least half the relevant investment life cycle for that sector. In the Large Electricity Producers sector, allocation periods should be at least 15 years to reflect typical power plant investment life cycles of around 30 to 35 years.

Allocation methodology for free allowances based on benchmarks:

— Benchmarks for free allocation should encourage diversity of fuel sources and encourage the best available technologies by fuel source. An allocation methodology based on benchmarks has greater potential for harmonisation across the EU sectors, reducing market distortions.

Conclusion

ScottishPower believes that market mechanisms have the ability to deliver economically efficient solutions to problems such as climate change, provided they are allowed to operate efficiently and are not subject to political inconsistencies and changes.

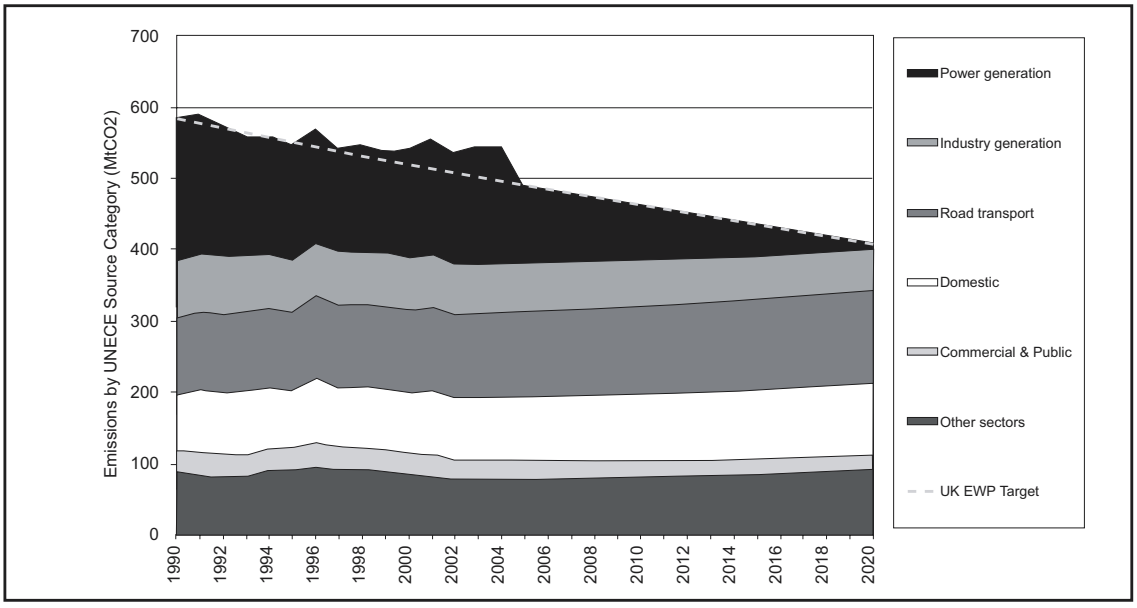
If it is to be effective, the ETS cannot continue to operate as 25 separate EU ETS schemes in Phase II and beyond. Unless there is greater harmonisation of key aspects of the scheme, the approach adopted by the UK could set its industry at a competitive disadvantage. We would support further work towards delivery of equivalent effort across the EU in order to counter the prospect of the UK continuing to go it alone at the expense of its industry.

The evolution of a transparent and effective EU-wide market will be critical in shaping a global emissions trading scheme where all countries are focussed on delivering the same goal.

Annex

Figure 1

IF GENERATORS HAD TO DELIVER UK's 2003 ENERGY WHITE PAPER REDUCTIONS



Source: John Bower—Oxford Institute of Energy Studies

Figure 2

2005 UK SECTOR LEVEL DEFICIT/SURPLUS ALLOWANCES

Table of 2005 sector emissions and allocations in millions of tonnes of carbon dioxide, including late and new entrants[1].

Sector[2]	No. of installations	Total allocation	% of sector allocations included in phase 1 (i.e. % that did not opt out)	Allocation to incumbent installations	Allocation to incumbents and new and late entrants	Verified emmissions	Difference between emissions and total allocation	% Difference between emissions and allocations
Power Stations	127	130.6	100%	130.6	135.7	172.2	-36.5	-21.2%
Refineries	12	19.4	100%	19.4	19.6	18.1	1.5	+8.3%
Offshore	112	17.5	67%	11.7	12.1	10.8	1.3	+12.3%
Iron & Steel	13	20	100%	19.9	21.3	18.8	2.5	+13.3%
Cement	14	9.6	48%	4.7	5.2	4.5	0.7	+16.6%
Chemicals	70	9.4	82%	7.7	8.2	6.7	1.6	+23.4%
Pulp & Paper	10	4.9	21%	1.0	1.0	0.8	0.2	+28.8%
Food, Drink & Tobacco	63	3.8	39%	1.5	1.5	1.3	0.2	+15.5%
Non-Ferrous	2	3	100%	3.0	3.0	2.7	0.3	+9.5%
Lime	5	2.6	41%	1.1	1.7	1.4	0.3	+23.3%
Glass	11	2	20%	0.4	0.5	0.4	0.1	+26.4%
Services	219	2	95%	1.9	1.9	1.9	0.0	+0.2%
Other Oil & Gas	36	1.59	100%	1.6	1.7	1.6	0.1	+9.2%
Ceramics	20	1.8	10%	0.2	0.2	0.1	0.1	+39.4%
Engineering & Vehicles	39	1.3	79%	1.0	1.1	0.7	0.4	+59.7%
Other	10	0.4	61%	0.2	0.3	0.2	0.1	+43.4%
Total		**229.9**	**89.6%**	**205.8**	**215.2**	**242.2**	**-27.0**	**-11.2%**

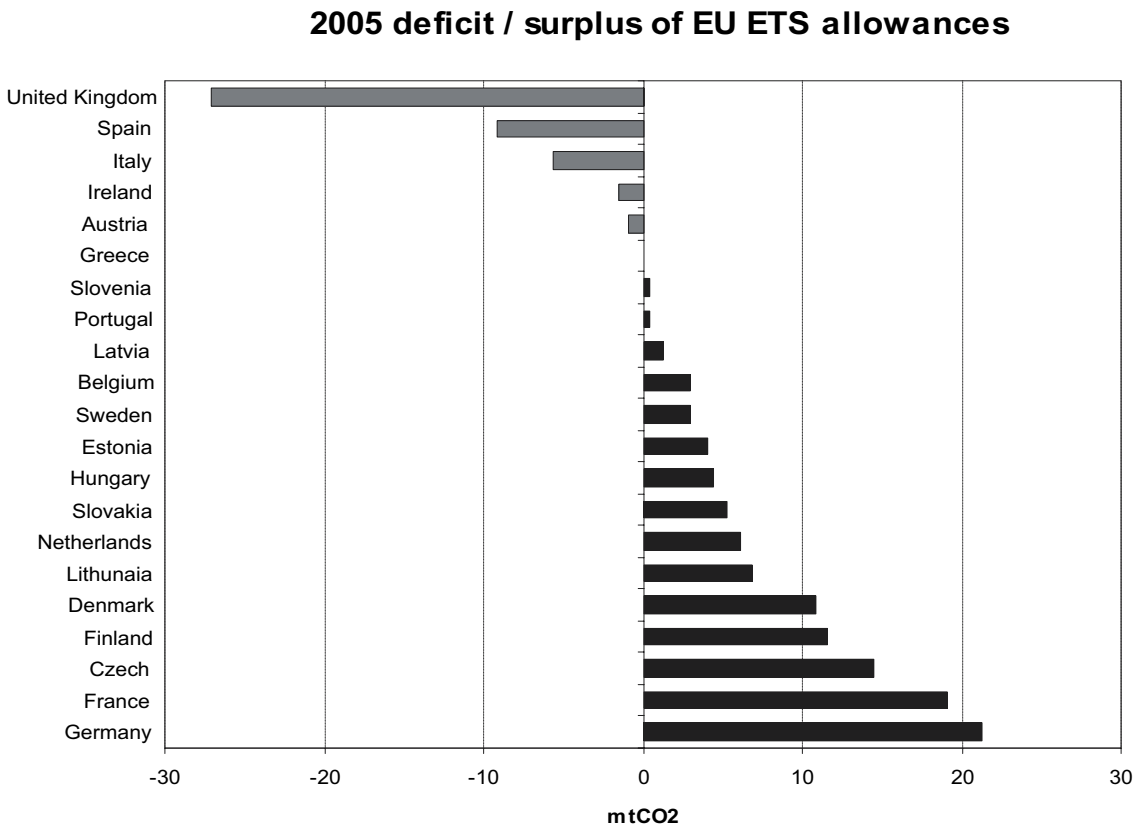
Source: DEFRA

Figure 3

PHASE II CDM/JI CAPS FOR MEMBER STATES (WHERE KNOWN)

	% Cap for CER/ERUs
United Kingdom	8% / 9.3%
Netherlands	8%
Belgium	8%
Slovakia	8%
Italy	10%
Portugal	10%
Luxembourg	10%
Finland	12%
Slovenia	17.8%
Austria	20%
Sweden	20%
Spain	50%
Ireland	50%
Average (excl. UK)	19%

Figure 4



October 2006

Memorandum submitted by Shell

Shell strongly supported the creation of the European Emissions Trading Scheme before its passage in the EU Parliament and has confidence that the scheme is the right first step in pursuing stable, market-based policies that help energy users and suppliers pursue innovative energy solutions. We have nearly 50 installations in the trading system, covering some 30 million tonnes of CO_2 emissions.

Shell has built a trading team to manage its position in this important market and we executed the first ever trade in EU allowances (in February 2003) and the first ever trade in 2008–12 EU allowances.

What are the key lessons to learn from Phase I of the Scheme?

- The first 18 months of operation of the EU ETS should be considered a success for such a complex and important undertaking. This is despite the concerns over allocation in the first year and the recent price volatility.
- The market is liquid, responsive to supply demand information and is sending a clear carbon price signal to industry that is being responded to.
- Mitigation projects will take time to develop but operational changes (eg fuel switching where possible, process optimization etc) are happening.

There are some areas for enhancement as outlined in our comments to some of the questions below.

How likely is it that UK firms would successfully reduce emissions by at least 7MtC by 2012, in line with the proposed Phase II NAP?

The UK reduction target for Phase II is an ambitious one, as it is set at the higher end of the range originally proposed. Since the EU ETS is a market-based mechanism companies must weigh the cost of abatement against energy costs and the (forward) market price of allowances. If the marginal cost of abatement for UK companies is perceived to be higher than the market price, then companies will choose to buy allowances. The price of allowances in Phase II will be driven by the perceived supply and demand balance, which is very dependent on the toughness or otherwise of the caps set by other Member States.

The legal obligation on installations in the UK and elsewhere in the EU is to hold allowances equal to or greater than their verified emissions for each compliance year. There is not a legal obligation to reduce emissions per se. Legal compliance with the EU ETS was 99.999% across the EU in 2005. It is profoundly unlikely that Shell and other UK companies will be non-compliant in Phase II.

There are 9,106 installations participating under the EU ETS with 4.64 billion allowances allocated (source: EC).

With daily traded volumes of 300,000–1 million and more than 100 active participants so far, it is clear that trading is a reality now. The Phase 1 NAPs are reasonably consistent with the types of reductions that industry can make in the relatively short (three years) first commitment period of the EU ETS. An emissions reduction strategy for an industrial facility will typically consist of three tranches:

1. Operational changes as a result of a renewed focus on energy efficiency—such changes can be implemented over a one year time frame but may only lead to improvements of 3–5%.
2. Small to medium projects which will deliver results in two to four years after inception.
3. Large projects which may take three to five years to fully develop and bring on line. Some of these projects could bring considerable reductions (eg 10%+ at unit level).

The NAPS for the first period can therefore only be based on the delivery of Tranche 1 type reductions. Nevertheless, industry needs a driver to incentivise the development of Tranche 2 and especially Tranche 3 type reductions. Ideally this would come from a clear future price signal that indicated a demand for such reductions in the period 2008–12. The current market structure and NAPs do not fill this role and hence present industry with a dilemma regarding the emissions reduction strategy to undertake. Once trading in the first period is fully established and a good number of the 7,000+ facilities in the EU are involved in such trade, we may see a second period price develop, which in turn will help guide a reduction strategy.

What have been the effects of the method chosen for allocating allowances in Phase I?

At the start of the emissions trading scheme, grandfathering offered a smooth and relatively easy transition from business as usual to carbon managed businesses. Grandfathering is an allocation methodology that is free of charge based on historical emissions. However in Phase I there was an issue of over allocation, which occurred partly because historical emissions data in some Member States was not robust and there was a lack of understanding what the application of specific allocation rules might result in. This has changed for the second period because we now have a better understanding of the allocation rules and also robust verified data on which to base future allocations.

Has the Government identified the correct proportion of allowances to be auctioned in Phase II? Should these be drawn solely from the power sector's allocation? What will the effect of this auctioning be on industry and the price of carbon?

Shell would support the auctioning of allowances provided this is designed to avoid perverse effects. However we do not support the type of auctioning that is currently being proposed for Phase II because there are no provisions in the Directive for dealing with the process and addressing the following issues:

- The political hurdle of making companies pay for any percentage of their allowance requirements. This may often be seen as a tax.
- The recycle or use of the funds in general. We propose recycling to avoid this being another tax, but this will add complexity and a secondary allocation debate with the associated issues of harmonisation.
- The negative impact on market functioning. Auctioning reduces overall liquidity and hence efficiency. Furthermore the conduct of multiple auctions in the course of a continuous and free market has the potential to lead to price spikes and collapses.
- The actual administration of auctions. Auctioning would be a serious undertaking because participation must be open to the international public but must also involve financial checks so that auction participants can guarantee to be able to pay for the allowances they bid for. This is a costly and resource heavy process that has no current precedent in any Government.
- Even auctioning a small amount of allowances incurs nearly all the costs of a full blown auction.

Please see Annex A for a discussion on the issues around allocation and auctioning.

What have been the effects of Phase I so far on the competitiveness of (1) business in the UK, and (2) business across the EU?

The current level of reductions asked for in Europe by 2012 is unlikely to impact adversely on EU company competitiveness. The reductions amount to good housekeeping and enhanced energy efficiency and there is still much that can be achieved through projects with a positive payback. Many US companies also operate within the EU and vice versa.

A renewed focus on energy efficiency across the EU, being the principal toolkit for emissions reductions, could well enhance industry competitiveness in the medium term.

What are the key issues for Phase II in terms of ensuring that emissions reductions from EU states are not cancelled out by the transferring of industry to developing economies?

It is essential that the caps are chosen so that they do not drive investment away from the EU. Whilst this might not drive industry away from the EU in the short-term, eg during Phase II, it will affect its long-term prospects when industry is looking at portfolio rationalisation and long-term investment decisions. We therefore believe it is essential to ensure a more global approach in future. This will also avoid the CO_2 emissions simply being moved to another part of the world.

How well are the EU ETS and the Clean Development Mechanism working together? What needs to be done to better integrate these markets? Is the CDM funding the right projects?

The evidence is that CDM is a strong success. Based on the data published by the UNFCCC we can calculate that approximately 200m CERs will be issued by the CDM Executive Board through Phase 1 of the EU ETS, ie before the end of 2007. This means that 200 million tons of CO_2e will have been reduced beyond Business as Usual. At an average of USD 15 per CER this results in a capital flow of USD 3 billion from Annex 1 to developing countries and is accompanied by significant technology transfer. The implementation of the underlying projects generates local employment and improves local environmental conditions and the result is a lower cost of compliance for European companies under the EU ETS.

The CDM is already a strong impact on the EU ETS with CER supply factored into EU Allowance pricing. It is important to note that the CDM process has successfully issued CERs to the CDM registry account. In effect we know that the CDM works. However, in order for CERs to physically flow into the EU ETS it is essential that the International Transaction Log project is completed by the UNFCCC. This is scheduled for Q2 2007 and the UNFCCC states that the project is on schedule, but EU Governments should ensure that this timeframe is adhered to in order to ensure efficient and timely linkage between the CDM and the EU ETS.

The CDM rationally flows capital to those projects that reduce emissions at lowest cost. So long as the underlying project methodology is approved through the CDM process then the project can be implemented and generate CERs. It is certainly not appropriate for any government to unilaterally apply constraints to CDM projects beyond the already onerous restrictions of the CDM process itself and the EU Linking Directive.

JI remains far less developed than the CDM and cannot issue ERUs before 2008.

How should aviation be included within the ETS? What are the latest indications of when it will be included?

- An emissions trading system should be widely inclusive for reasons of lowest cost reductions to the economy, environmental benefit and scale and liquidity of the market. However, a certain minimum size for an individual participant is sensible so as not to introduce high transaction and participation costs into such a system (currently the EU ETS is set at 20 MW thermal rating or equivalent, which appears appropriate).
- Emitting participants in an emissions trading market must be driven by the basic model of "make or buy"—ie an emitter has the necessary control over such emissions to manage compliance both through trade in allowances and the implementation of a range of abatement projects.
- The aviation business fits these criteria and should therefore be included within the EU ETS (vs passenger road transport which does not fit these criteria).
- We do not support the expansion of aviation emissions to include the radiative forcing factor (emission impacts at various levels in the atmosphere)—this issue is entirely separate from the aims of the UNFCC and the Kyoto Protocol and the specific mandate of the EU ETS.
- We do not have a specific position on the details of inclusion of aviation—such as the applicability of different allocation models, the types of flights to be included, measurement and verification of emissions etc. as yet on how any system would work from 2008, as the rules have not been set or agreed.

The Environment Secretary has said: "we will support the Commission in its efforts to enforce tough caps". What exactly should the Government be doing to influence this?

"Tough" is an entirely subjective term. We see the UK wanting to go further than Kyoto with its CO_2 emissions reduction programme but the aim must be to ensure that a well functioning ETS market operates through to 2012 and that it has sufficient bite to encourage trading activity and to encourage CDM and JI project investment. A weak oversupplied market will see those systems stalling, which nobody wants. Good investment in CDM and JI will see a substantive flow of CERs and ERUs flow into the EU ETS to meet the demand and hence keep prices in check.

How well integrated are the ETS and other EU climate change policies?

So far the EU ETS is not well integrated with other EU climate change policies and there is still a lot of work to be done on:

- the ETS and renewable power generation objectives;
- the ETS and possible biofuel manufacture;
- the ETS and transport; and
- the ETS and carbon capture and storage objectives.

We would also like to see the EU ETS linked with other trading systems.

What work needs to be done now to help design a third phase of the EU ETS? How can the experience of the EU ETS be used to help the design of a post-2012 Kyoto mechanism?

Shell supports the general approach being taken on the structure of Phase III of the EU ETS. In our view it is not necessary to make significant changes in the structure of the EU ETS. The following are the elements that we consider important for Phase III and subsequent phases:

- To ensure long-term investment decisions can be made, there is a need for confirming that carbon trading is here to stay. This does not mean that there must be allocation for tens of years ahead, but that there will be a market in tens of years ahead.
- It is important that there are no artificial limits (eg on the carbon price, use of CERs/ERUs) placed in the system, which in the longer term can lead to market distortions or even market failure and thus counteract any incentivising effect.
- The infrastructure needs to be fully functioning, ie all relevant registries as well as the International Transaction Log (ITL) are in place.
- As the EU ETS links to more diverse international carbon markets in the coming years, the infrastructure (eg registries etc) will need to be delivered in a timely manner and then well maintained in the future.
- Even if companies do not have a specific individual allocation, it is important to know what the system is driving towards in the longer term.
- In order to avoid competitive distortion, further harmonisation is required, inter alia on allocation methodologies/rules, the definition of (combustion) installations, the treatment of small emitters.
- The EU ETS needs to be linked to other trading schemes as they develop in order to encourage the use of such market mechanisms and improve the liquidity of the market. This will further level out CO_2 prices and optimise overall allocation of resources.
- Shell believes that emissions trading is an important mechanism to incentivise the deployment of clean technologies such as carbon capture and storage (CCS). Recognition of CO_2 stored as part of a CCS operation from installations included in the EU ETS, via approval of appropriate monitoring and reporting guidelines for CCS, is a critical part of Shell utilising market mechanisms to cost-effectively reduce emissions. Our Principal Scientist for CO_2 Mitigation has been involved in the European ad hoc Group of CCS experts established to develop draft interim monitoring and reporting guidelines for the inclusion of CCS within the EU ETS. These were subsequently presented by the DTI to the European Commission and are endorsed by us.

Annex A

ALLOCATION AND AUCTIONING

The objective of an emissions trading system is to direct capital within the covered sector to the point at which it can be most effectively used to mitigate emissions. Conversely, the objective is not to withdraw capital from the economy and redistribute it to projects according to some subjective or non-market based set of criteria. This means that allowances should be distributed without cost to the emitters.

But an essential requirement of an emissions trading system remains the allocation of allowances to the participating installations. Once the total number of allowances in the system has been determined and fixed (which then sets the overall environmental objective of the system), there are broadly three ways to do this:

1. **Grandfathering:** Free *ex ante* allocation of allowances based on some percentage of the historical emissions of the facility.
2. **Benchmarking:** Free *ex ante* allocation of allowances against a projected emissions rate (based on a technology standard or benchmark) and projected (or historical) production level of the facility.
3. **Auctioning:** The available allowances are sold to the participants by the government.

Grandfathering is a useful and simple tool to start an emissions trading system, in that with free allocation based on historical emissions, there is minimal disruption to the economy and the likelihood of shocks is diminished. However, most see that grandfathering is not sustainable, as a fixed base year (eg 2006) eventually becomes distant and irrelevant to future emissions from an installation and a moving base year does not encourage emissions reductions (ie higher current emissions could give more future allowances). Grandfathering also poses problems for new entrant allocation, since the new entrant faces a considerable barrier to entry unless a new entrant reserve is created.

The other free alternative, benchmarking, is worthy of consideration, but it too has difficulties. The benchmark system requires that an industrial process can be described in relatively simple mathematical terms, eg xx tonnes of CO_2 per unit of output, such that the allocation can be calculated based on readily available and transparent operating data. However, simple benchmarks for complex industrial processes such as refining are very difficult, if not impossible, to achieve. That means a single installation might have its allowances calculated on the basis of multiple benchmarks, markedly increasing the complexity of the approach and the data collection requirement. Some industrial sectors say that benchmarking is ideally suited to their particular sector.

If grandfathering and benchmarking become problematic, only auctioning remains. From an allocation outcome perspective, auctioning has the benefit of simplicity, transparency and equitable treatment of new entrants and incumbents and automatically answers the question of how to harmonize allocation. However, auctioning also raises significant concerns:

- Payment for allowances withdraws capital from the economy that might otherwise be used to invest in emissions reduction projects.
- If the revenues from auctioning are to be recycled then there is the immediate issue of an (secondary) allocation process to support the recycling. It is unlikely that such a process would be as efficient as a market-based approach in directing the capital to the best projects.
- The conduct of multiple auctions in the course of a continuous and free market has the potential to lead to price spikes and collapses.
- The administration of auctions is a serious undertaking because participation must be open to the international public but must also involve financial checks so that auction participants can guarantee to be able to pay for the allowances they bid for. This is a costly and resource heavy process that has no current precedent in any government.

Putting aside the last two bullets (but still recognizing they remain significant hurdles), this raises the question of how the transparency of an auction can be utilized, without the capital distribution problems presenting themselves. Two key elements would need to be in place:

- The funds generated from the auction need to be 100% recycled to the emitting participants within the trading system, with little or no lag between payment and receipt so as to avoid working capital issues.
- The mechanisms for recycle need to be contained within the trading system auction structure and not left to the later discretion of Government.

Such an approach is possible and is described in the example given below.

Example: "*Cap and Trade" Structure with 100% Auctioning and Recycling of Funds*

1. The auction takes place at the start of each year for 100% of that year's allowances. The market knows the total number of allowances available from the government some years before. The government runs the auction with the aim of 100% clearance—eg the reverse process can deliver this—the price is dropped each day and participants take what they need at a price of their choice until no more allowances are left.

2. Payment does not immediately take place even though the allowances are immediately distributed. However, the government calculates its revenue from the auction process for that year. Say in this example the government sells 1 billion tonnes of allowances at $10 each, ie $10 billion. Company A has one facility in this MS, emitting 950,000 tpa. They buy 800,000 tonnes in the auction.

3. In April of the same year the Government collects allowances for emissions in the previous year. This becomes the mechanism for redistribution of the auction funds, with the government in effect buying back the allowances from the previous year. Say the emissions in the previous year are 1.04 billion tonnes and this number of allowances are deposited on the national registry. Therefore, each allowance is worth 10 billion/1.04 billion, or $9.62 each.

4. The Government then bills or pays for any differences as necessary. In the case of Company A, it emitted 961,000 tonnes in the previous year. The government would pay Company A 961,000*9.62—800,000*10 = $1.24 million. Had Company A bought 1 million allowances it would have paid the government $755,000.

5. Rules for new entrants and shutdowns can also be simplified and eliminate the need for structures such as a "new entrants reserve":

For a new entrant: New entrants also have to buy all their allowances, either in the government auctions or from the market. However a new entrant is granted the equivalent of one year's emissions (eg as per their planning application) of "recycle allowances" upon start-up of the facility. These allowances cannot be used against emissions and cannot be traded. They simply allow the new entrant to obtain (additional) recycle funds from the first auction they participate in.

Facility shutdown: Once a facility is shutdown, recycle funds cannot be received.

Although further detail and rules for special cases would still need to be developed, this outline illustrates that an auctioning approach could be put into practice. In this approach, the key financial concerns of the auction process are effectively addressed, ie:

1. Much less financial exposure for individual parties and less financial exposure for the government to individual participants.

2. No complex reallocation process.

3. No drain on funds from the private sector.

New entrants are also effectively catered for.

October 2006

Memorandum submitted by RWE npower

About RWE npower

1. RWE npower, part of the RWE Group, is one of the UK's largest energy suppliers, with around six million customers and a diverse portfolio of over 9,000MW of generation capacity in the UK including coal, oil and gas-fired power stations. We are also one of the UK's leading renewable energy developers and operators in the wind, hydro and biofuel generating sectors and one of the foremost developers and operators of industrial combined heat and power (CHP) in the UK.

2. We have participated in the European Union Emissions Trading Scheme (EUETS) since it entered into force in January 2005 and we welcome the opportunity to contribute to the Environmental Audit Committee's inquiry into the lessons learned from Phase I.

Introduction

3. The EUETS is a key element of the policy framework for achieving the UK's and Europe's climate change policy objectives and it is important that the development of Phases II and III strengthen the scheme such that it is capable of underpinning long-term investment by industry in low carbon technologies. However, given that the UK Phase II National Allocation Plan (NAP) has already been submitted to the European Commission, we would recommend that the inquiry should be focused primarily on what is required to put the EUETS on a sound footing post-2012.

Experience of EUETS Phase I

4. We fully support market mechanisms and believe that an efficiently functioning EUETS is the most effective means of delivering cost-effective reductions in greenhouse gas emissions. Despite the many inconsistencies and deficiencies in Member State Phase I NAPs and the delays in getting appropriate systems and registries in place, the carbon market is up and running and functioning well for those who are participating in it. This is a significant achievement in itself. While it is important that the Phase II NAPs make progress on harmonising the approach to allocation and are seen to deliver emission reductions consistent with Member States' Kyoto commitments, we need to recognise that it will only be possible to address some of the key deficiencies through the forthcoming revision of the Directive. It will be important that the UK Government is proactive in working with other Member State Governments and the European Institutions over the next 12 months to ensure that the resultant legislative proposal addresses the issues discussed below.

5. Phase I of the EUETS was always intended as an initial learning phase and it is important that the lessons learned during this period are taken into account, both in the development of NAPs for Phase II and in the review of the scheme post-2012. Although 2005 may not be fully representative of the whole of the first compliance period, it is clear that the majority of Member States (including the UK) allocated more allowances than were needed to sectors other than the electricity sector. In the UK and elsewhere, Governments took the view that because of national competitiveness issues all sectors other than the electricity sector should be allocated allowances in line with business as usual (BAU). The difficulty in assessing what represents business as usual emissions resulted in the apparent widespread over allocation of allowances to other sectors. This has resulted in the failure of the majority of sectors to actively participate in the market and as a consequence the allowance price has primarily been determined by the balance between supply and demand for those willing to participate in the market, rather than being related to real market fundamentals.

EUETS Phase II and III

6. The proposed UK NAP for Phase II continues the approach of protecting the non-electricity sectors on competitiveness grounds. Even though there may have been improvements in the projections of likely emissions from the other sectors covered by the trading scheme (which we would hope will result in allocation closer to BAU) there is no real incentive for many of these sectors to actively participate in the market. It is important that Phase III addresses this fundamental market failure.

7. All sectors in the EUETS must share the burden of reducing emissions and competitiveness issues must be fully understood and addressed at an EU level in Phase 3. This will be fundamental to establishing an efficient and transparent market capable of underpinning a robust carbon price to support investment. If competitiveness issues are considered to be of such significance for any one sector, the appropriateness of their continued participation in the EUETS should be reviewed.

8. Government needs to strengthen the resolve of the European Commission in its review of the Phase II National Allocation Plans to ensure that these are sufficiently stretching to deliver the EU's Kyoto commitments and go as far as possible (within the limitations of Annex 3 of the EUETS Directive) to developing an efficient and transparent market which engages all participants. Without this it is unlikely that it will be possible put the scheme on a sound footing in Phase III.

9. More effort is needed to ensure the market operates efficiently especially in the area of transparency around release of emissions data. Whilst it is important that there is data in the market around emissions from participants this must be balanced against avoiding increased bureaucracy and costs to participants.

10. Following on from agreement on Phase II NAPs, we believe the Government should focus on ensuring that agreement is reached on the changes needed to the Directive to ensure a long-term future for the EUETS. Securing international agreement on climate change policy post-2012 is fundamental to putting the EUETS on a sound long-term footing. The Government needs to define a trajectory for UK CO_2 emissions reductions within a wider EU and international context for at least a 15–20-year period. This clear indication of the path for future emissions reductions will provide the long-term price signals required to incentivise investment in low carbon energy technologies.

11. We support the Government in its endeavours to play a leadership role both within the EU and in international negotiations. However, it may take some time for international negotiations to get to a position where the extent of the EU's long-term climate change commitments are clear. Consequently, Member States need to start working now on the burden sharing arrangements post-2012, as these will be critical in underpinning the EUETS. Failure to achieve agreement on these could thwart any efforts to secure an early move to longer-term commitment periods within the scheme, which are seen by Government and industry as critical in underpinning large-scale investment by industry. Alternative approaches to burden sharing, for example setting sector level rather than Member State level targets should be considered.

Recommendations for Key Priorities Going Forward

12. There are a number of key priorities for the future design of the scheme.

- The efficiency and transparency of the scheme is fundamental to the delivery of a robust CO_2 allowance price that can support large-scale investment in low carbon technologies.
- To build investor confidence, future commitment periods need to be aligned to the timeframe associated with large-scale investments by industry. Ideally, a minimum period of 15 years is required.
- Harmonisation to the greatest possible extent of rules relating to allocation, the treatment of new entrants and closure is essential to limit market distortions and minimise competition impacts within the EU. One way of achieving this would be through adopting a sectoral approach at EU level. There may be a need for a regional level approach in the interim, dependent on progress towards securing full market liberalisation.

— The threat of EUETS to EU competitiveness has resulted in Phase I and II NAPs which fail to engage many sectors in the market. A number of studies have shown that the competitiveness argument has been overplayed and, while some element of differential allocation may be justified, all sectors should share the burden of delivering emission reductions. It is essential that competitiveness issues are properly understood and addressed in the design of Phase 3, as this will be fundamental to securing an efficient and transparent market which delivers emission reductions at least cost.

— Activity in Joint Implementation (JI) and Clean Development Mechanism (CDM) projects is expected to fall off steeply within the next few years due to the absence of any agreement on the use of these mechanisms post-2012. An early commitment by the EU to the continued use of these or similar mechanisms is critical to maintaining company activity at current levels and also to securing international agreement on climate change policy. Any decision must also inform companies of the extent to which JI and CDM credits can be used within the EUETS in the longer term.

— Expansion of the scheme to include new sectors or gases should not put at risk the early establishment of an efficient and transparent scheme that provides the necessary confidence for current participants in EUETS to invest at scale in low carbon technologies. Emissions trading may not necessarily be the most appropriate instrument for delivering emissions reductions in potential new sectors and it will be important to establish that other measures are not more appropriate.

October 2006

Memorandum submitted by Virgin Atlantic

INTRODUCTION

1. Virgin Atlantic welcomes the opportunity to submit evidence to the Environmental Audit Committee's inquiry into lessons to be learnt from Phase 1 of the EU Emissions Trading Scheme (EU ETS). As the UK's second largest airline, we are highly conscious of the impact of aviation on climate change and are committed to making every effort to address our own carbon footprint.

2. Virgin Atlantic operates long-haul services to destinations including the United States, the Caribbean, India, China and South Africa. Currently, the UK's Emissions Trading Scheme is limited to airlines operating domestic flights and we have, therefore, had no direct experience of emissions trading. However, we do have views on the substantive policy issues and practical matters which need to be addressed if aviation is to be included in the EU ETS and have provided our thoughts in this memorandum.

THE CHALLENGE OF CLIMATE CHANGE

3. Climate change is one of the most significant challenges facing the European Union at present and emissions trading has a significant role to play as part of a balanced package of measures.

4. Virgin Atlantic is well aware of the impact of the aviation industry on climate change. If the UK is to retain its position as a leading player in the international aviation industry, and boost the employment and income that derives from this, aviation capacity must expand. However, such expansion must take place in a way that takes the impact the industry has on carbon emissions into account, whilst being sensitive to the need to maintain the economic competitiveness of the EU aviation industry vis-à-vis that of third countries.

THE EUROPEAN EMISSIONS TRADING SCHEME

5. The EU ETS is the world's first supranational Emissions Trading Scheme; this is an achievement in itself and should be applauded. The setting up of the scheme by the EU member states is recognition of the attractions of emissions trading as a carbon abatement measure, offering an economically efficient and environmentally effective way of reducing the carbon impact of industry. The EU scheme has served to incentivise emissions reductions and has, therefore, started to serve its purpose.

6. However, Virgin Atlantic acknowledges that the progress made so far should be seen as only the start of what will be a long journey and the committee is right to have concerns about the operation of the system to date. Some of the targets set by member states in their National Allocation Plans have been unchallenging and have failed to address the fundamental nature of the climate change challenge and the need to make urgent progress. Carbon is currently trading at a low price and the target caps set by member states have in some cases resulted in an unedifying "race to the bottom."

7. Nevertheless, evidence shows that the existing EU ETS has had a positive impact on participating industries and has delivered benefits. We would also note that the true impact of emissions trading should be measured in terms of the influence it has on medium to long-term investment decisions. This will be

particularly true of aviation's eventual inclusion in the scheme, where the real carbon savings will result from investment in new, more fuel-efficient aircraft. In our view, emissions trading continues to present the best option for addressing climate change in the long-term.

8. Virgin Atlantic has to date not participated in the EU Emissions Trading Scheme or the UK Emissions Trading Scheme. This is because only domestic aviation services are currently covered by the Kyoto Protocol and by extension the UK ETS, so as a purely long-haul airline, we have been unable to participate. We have, however, strongly supported the UK Government's efforts to extend the scope of the EU ETS to include air travel more generally, although we realise this may initially have to be limited to intra-EU routes.

9. Given our limited experience of Phase 1, we do not have specific comments on the lessons to be learnt to date. However, we do note the European Commission's calls for greater consistency in national approaches, fuller harmonisation and a simplification of the allocation rules. Virgin Atlantic agrees with all of this, and believes greater harmonisation and simplification are particularly important if aviation is to be integrated into the EU ETS.

Aviation's Inclusion in the EU Emissions Trading Scheme

10. Virgin Atlantic believes that the EU ETS will be the best way to motivate meaningful behavioural change in the aviation industry. Emissions trading encourages companies to invest in more fuel efficient and environmentally friendly technologies to reduce fuel consumption (although it should be acknowledged that given the proportion of total costs taken up by fuel costs, the aviation industry already has a massive motivation to reduce fuel consumption—for example, Virgin Atlantic's own fuel bill has risen by two or three times as a result of recent increases in the price of oil).

11. The committee has asked two specific questions relating to the inclusion of aviation in the EU ETS:

12. How should aviation be included within the ETS?

13. What are the latest indications of when it will be included?

How?

14. Virgin Atlantic's position has consistently been that aviation should be included in the EU ETS as soon as is practically possible. This would allow airlines to meet the environmental challenge in a way that will not damage the economic competitiveness of the industry and will create incentives for operators to change their behaviour.

15. The UK Government adopted this position in the Aviation White Paper in December 2003 with the full support of industry. Some progress has been made since then, and the Department for Transport and DEFRA have both been undertaking considerable work, feeding into the European Commission's own efforts. We have urged DEFRA to push for an international scheme to be established as soon as possible, although we realise that this may initially have to be limited to intra-EU flights. We eagerly await the European Commission's legislative proposal for inclusion of aviation in the EU ETS, expected by the end of this year.

16. Airlines can undoubtedly make a contribution to reducing carbon emissions through participation in the EU ETS. Currently, only domestic aviation services are covered by the Kyoto Protocol. Virgin Atlantic would argue for **all** aviation to be included within the EU ETS, capturing both intra-EU flights as well as those between EU member states and third countries. An international ETS represents the most effective way for industry to tackle climate change, limiting total emissions whilst encouraging companies to invest in more fuel efficient and environmentally friendly technologies. As the Commission stated in its September 2005 communication on reducing the climate change impact of aviation, "*narrowing the scope only to flights within the EU would cover less than 40% of the emissions from flights departing from the EU. It would also favour long-haul over short-haul flights, thus contradicting the strategy's environmental objectives.*"

17. There are nevertheless a number of practical and public policy problems that need to be resolved before aviation can be included in the EU ETS:

18. **Level playing field:** The EU ETS should operate a level playing field, not unfairly discriminating between one industry and another. The aviation industry should, therefore, be permitted to enter the Scheme on the same conditions as other industries. Unfair discrimination would skew the market. The cap should also continue to be shared out on the basis of grandfathering, as with participants from other industries. This would ensure that aviation is on an equal footing with other ETS participants. Grandfathering has also been the dominant distribution mechanism between 2005 and 2007. In the first instance, the scheme should also be limited to carbon dioxide; to expand beyond this would add to the complexity of the decision-making process, delaying aviation's inclusion in the scheme further.

19. **Scientific certainty**: The scientific evidence for climate change is overwhelming and few now doubt that decisive action needs to be taken. Virgin Atlantic is committed to taking action to combat climate change. However, there continues to be considerable scientific uncertainty at the margins on a number of matters. One such issue is the impact of radiative forcing and the impact of emissions released at altitude. A number of different estimates have been made of the effect of emissions at altitude and as the Committee

has previously acknowledged, the scientific uncertainties involved mean the effect could be substantially smaller or larger than the 2.7 multiplier used by the IPCC. This in no way provides an excuse for inaction, but does emphasise the need to proceed on the basis of certainty. The European Commission is funding research into this as part of 7th Research Framework Programme and we look forward keenly to the outputs of this process.

20. **Cross-border emissions:** We do not underestimate the scale of the challenge in reaching agreement on an ETS, especially in light of the debates that are already taking place on how to allocate emissions that cross borders. Whilst the most effective ETS would be one that was international in scope, we recognise the difficulties of reaching agreement within ICAO given the current position of the US. ICAO has nevertheless expressed the view that emissions trading is a sensible approach and is working towards a solution. Virgin Atlantic continues to engage with ICAO to this end. It may be that an intra-EU ETS is easier to agree in the short term, although Virgin Atlantic's preferred option would be an international scheme.

21. The earliest date at which additional sectors can be included in the EU ETS is 2008. However, the Commission has indicated that it may not be possible to include aviation before 2012–13 because of problems with attributing emissions across national boundaries. There is the additional requirement for legislation to be subject to the EU co-decision procedure, in which the European institutions could take two to three years to reach agreement.

22. Virgin Atlantic remains committed to pushing for progress to be made on this important issue at the earliest possible opportunity and is in regular dialogue with officials at both UK and EU levels to this end.

23. In conclusion, Virgin Atlantic remains convinced that the inclusion of aviation in an EU ETS with international scope continues to present the best vehicle for tackling the climate change impact of aviation. However, we acknowledge that the need to reach agreement with international partners on this—including both other EU Member States and even maybe the US—render this a very challenging objective. Inclusion of aviation in an intra-EU basis in the interim period may present the most practicable solution. We will continue to lobby strongly for agreement in both the EU and ICAO.

24. In the meantime, Virgin Atlantic remains committed to tackling climate change unilaterally through a series of initiatives. Sir Richard Branson recently announced that, for the next 10 years, all his earnings from Virgin Group companies (estimated to be in the region of $3 billion USD) will be invested in schemes to develop new renewable energy technologies. Whilst alternative aviation fuels remain some way off, their potential should not be overlooked.

25. Virgin Atlantic has also invested considerable funds in its fleet, which is young and fuel efficient. We are also in discussions with BAA about more fuel-efficient taxiing before take-off and with NATS about air traffic management improvements to landing approaches which could result in significant carbon savings. The European Commission also recognises the potential offered by Air Traffic Management improvements and is taking this workstream forward through the Single European Sky initiative.

Integration of ETS and Other EU Climate Change Policies

26. As we indicated above, climate change is one of the major challenges facing the European Union. Climate change policies need to generate behavioural change if they are to reduce carbon emissions effectively. Emissions Trading is attractive because it does motivate such behavioural change and would result in real reductions in carbon. Taxes or charges represent blunt instruments that penalise passengers rather than motivate change on the part of airlines, whilst impacting on the overall economic competitiveness of industry.

27. Research into technological change should continue, and all interested parties should participate. Airlines have a strong incentive to engage in such research given the proportion of total costs taken up by expenditure on fuel. The Virgin Group is already investing considerable moneys into research into biofuels which offer considerable long-term potential for tackling climate change. The European Commission has made research into ways to reduce impact of aircraft on the environment a key theme of the 7th Research Framework Programme.

Conclusion

28. Key conclusions are as follows:

- Virgin Atlantic believes that challenging targets should be set for Phase II of the EU ETS, based on a simplified and harmonised approach across the EU.
- Securing the participation of aviation in the EU ETS would be the best way to motivate genuine behavioural change and carbon savings in the long term. The scheme should cover all flights—both intra-EU flights and those to third countries—to avoid undue market disruption and have the optimal environmental impact.
- A level playing field should be maintained between aviation and other sectors, with aviation entering on the same conditions as other industries and the cap being set on the basis of grandfathering.

— Decisions should be taken on the basis of scientific certainties. Further research should be conducted by both government and industry to ascertain the impact of radiative forcing.

— The UK should push within the EU for aviation to be included in the EU ETS as soon as is practicably possible. In the meantime, Virgin Atlantic remains committed to taking action through research and investment to reduce its own carbon footprint as much as possible.

October 2006

Supplementary memorandum submitted by Ian Pearson MP, Minister of State for Climate Change and the Environment, Department for Environment, Food and Rural Affairs

When I gave evidence to the Committee on 12 December as part of your inquiry into the EU Emissions Trading Scheme, I undertook to send you further information on a number of points.

One of the issues that the committee was particularly interested in was the exact level of emissions abatement that has taken place since the Scheme began. During the session I mentioned a study by the Massachusetts Institute of Technology which suggests that the EU ETS may have resulted in emissions savings of between 50 and 200 $MtCO_2$. Officials have since given a copy of this to the committee clerk [not printed].

The Committee were also interested in the level of emissions savings observed in the UK due to the Scheme. As I said in my written evidence it is difficult to draw firm conclusions with just one year's data. However comparing 2003[23] and 2005 emissions in the UK from incumbent installations in the EU ETS shows a reduction of around $10MtCO_2$ (4%). A number of new installations commenced operation and entered the Scheme in 2004 and 2005, emitting a total of around $5MtCO_2$ in 2005. Therefore, the net total reduction in emissions from UK installations (incumbent and new) in the EU ETS was approximately $5MtCO_2$ between 2003 and 2005.

My officials have carried out a series of analyses of the first year results of the EU ETS examining the results by the sector and as a whole. The first of these was published shortly after the Committee's hearing and may be of interest. The analysis can be found on the Defra website:

http://www.defra.gov.uk/environment/climatechange/trading/eu/results/index.htm

You were also interested in actions by individual companies. For confidentiality reasons we cannot identify companies, however, the Carbon Trust is working with 92 organisations with installations covered by the EU ETS to reduce their emissions. This work includes reducing energy use in plants and in depth energy efficiency measures.

Kyoto Project Credits in EU ETS

We discussed at some length during the evidence session in the interaction between the EU ETS and Kyoto project credits and I undertook to set out the detail for the Committee's benefit.

The UK has welcomed the Commission's announcement in its decision on the first batch of Member State National Allocation Plans to limit the amount of Kyoto project credits that can be used in meeting the EU ETS requirements. This announcement ensures that the EU ETS will deliver reductions in CO_2 emissions within the EU rather than just through the purchase of Kyoto credits. The Commission considers that as a general rule installations in the EU ETS should be allowed to supplement their EU allowance allocation by up to 10%. In assessing Member States' proposed limits that are greater than 10% the Commission takes into account the effort a member state has to undertake to respect of its Kyoto target. This reflects that some Member States may have a variety of mechanisms to meet their Kyoto targets (ie not just the EU ETS). This is taken into account using a formula set out in the Commission communication. The Commission formulae aims to ensure that each Member State does include at least come CO_2 reduction within the EU and is not wholly reliant on purchasing Kyoto project credits.

For the UK's phase II National Allocation Plan the Government decided to allow operators in the EU ETS to use Kyoto project credits, derived from reductions of emissions of any of the basket of six greenhouse gases, to provide them with further cost-effective and flexible compliance options.

By setting a limit on the use of project credits of 8% we are signalling the need to create a market for investment Clean Development Mechanism & Joint Implementation projects balanced against domestic action. This 8% limit represents around two-thirds of UK effort level—the level of effort is the distance between the emissions projections for the period and the UK emissions cap. Therefore at least one third of the reductions delivered by UK installations, compared to projected emissions, must be made within the Scheme—either through making reductions themselves or buying allowances from other installations. And no more than two-thirds can be delivered from outside the EU using the Kyoto flexible mechanisms. The 8% is arrived at using the following calculations:

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[23] Lack of verified emissions data for 2004 means we must compare with 2003 data.

The UK's yearly effort level (distance between projections and cap) is 8 MtC, or 29.3 $MtCO_2$.
2/3 of 29.3 = 19 $MtCO_2$ = 8% of yearly cap of 246 $mtCO_2$
19$MtCO_2$ = 8% of the annual cap of 246 $MtCO_2$

Transport Voluntary Agreements

The current voluntary agreements on new car fuel efficiency were agreed between the European Commission and the automotive industry and aim to reduce the CO_2 emissions of an average car sold to 140 g/km by 2008–09. This represents an improvement of 25% in the average fuel efficiency of new cars sold across the EU. The European Commission are currently considering what should replace the current voluntary agreements beyond 2008.

Meteorological Office Funding

Joan Walley raised funding for the Meteorological Office which is a Trading Fund Agency owned by the Ministry of Defence. It is one of the world's leading National Met Services with key responsibility—through its Public Weather Service—for providing National Severe Weather Warnings and a range of other forecast services to the public.

The Public Weather Service is funded by MoD, on behalf of a number of government departments. Funding currently amounts to some £65 million per annum. MoD has already identified efficiencies in this budget totalling £6.5 million in real terms over four years. As part of the MoD's regular two-yearly planning rounds, further reductions of £9.5 million over four years are being considered—but no decisions has been taken yet. Ministers will be making decisions o the forward Defence programme, including the Met Office, in the first quarter of this year.

None of these cuts will affect overall funding for climate change research. In fact, we are increasing our overall funding in this area from £17.4 million in 2006–07 to £18.4 million in 2007–08.

Separately, Defra and the MoD are currently funding an independent review of the Hadley Centre, but there are no plans to cut its funding. The review is a normal give yearly examination of the science and activities of the Hadley Centre, and how it meets the needs of its MoD and Defra clients in delivering climate change research. It is not concerned with wider Met Office Public Weather Service activities or budgets.

I hope these answer the outstanding questions and inform your report. I look forward to receiving your recommendations which will be timely for contribution to the Review of the EU ETS.

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