



House of Commons
Environmental Audit
Committee

Personal Carbon Trading

Fifth Report of Session 2007–08



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*Report, together with formal minutes, oral and
written evidence*

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The Environmental Audit Committee

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

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A list of Reports of the Committee from the present and prior Parliaments is at the back of this volume.

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Summary

If the Government is to stand the slightest chance of meeting its 2050 carbon emissions target it cannot afford to neglect the domestic and personal sector. Reductions in carbon emissions from business and industry will be meaningless unless accompanied by significant and equal reductions from households and individuals.

Existing initiatives are unlikely to bring about behavioural change on the scale required, with many individuals choosing to disregard the connection between their own emissions and the larger challenge. Personal carbon trading might be the kind of radical measure needed to bring about behavioural change.

We believe that personal carbon trading has the potential to drive greater emissions reductions than green taxation. Personal carbon trading could guarantee a reduction in emissions because it places a ceiling on the carbon available for consumption, rather than seeking to reduce demand. Equally important, a carbon allowance could be more effective at incentivising behavioural change and engaging individuals in reducing their emissions than the price signals resulting from green taxation. There is also potential for a well explained personal carbon trading system to be better received and accepted than green taxation, because instead of all households being penalised, many would actually stand to benefit.

What is needed, urgently, is a shift in the debate away from ever-deeper and more detailed consideration of how personal carbon trading could operate towards the more decisive questions of how it could be made publicly and politically acceptable. It is these questions that will ultimately decide the viability of personal carbon trading.

Opposition to personal carbon trading could be reduced if the public could be convinced of three things. First, that it is absolutely essential to reduce emissions; second, that this can only be achieved if individuals take personal responsibility for reducing their own emissions; and third, that personal carbon trading is a fairer and more effective way of reducing personal emissions than alternatives such as higher taxes. The public must be persuaded of the first two parts of this argument as soon as possible if the Government is ever to convince them of the third. Persuading the public depends on perceptions of the Government's own commitment to reducing emissions, and of the priority given to climate change in its own decision making.

Personal carbon trading will inevitably highlight existing inequalities of income and opportunity. Any instrument designed to restrict and reduce domestic carbon emissions would raise the same concerns. As with any other policy, these inequalities will need to be identified, assessed and, where appropriate, compensated for.

Personal carbon trading could be essential in helping to reduce our national carbon footprint. Further work is needed before personal carbon trading can be a viable policy option and this must be started urgently, and in earnest. In the meantime there is no barrier to the Government developing and deploying the policies that will not only prepare the ground for personal carbon trading, but which will ensure its effectiveness and

acceptance once implemented.

We regret that, following its pre-feasibility study into personal carbon trading, the Government has decided to wind down its work in this area on the grounds of high implementation costs and public resistance to the concept. We recognise the extent of these challenges, but we believe that work on personal carbon trading must be continued in earnest if these difficulties are ever to be overcome. Although we commend the Government for its intention to maintain engagement in academic work on the topic, we urge it to undertake a stronger role, leading and shaping debate and coordinating research. Without action of this kind it is unlikely that personal carbon trading could become a viable policy in the foreseeable future.

We acknowledge the many difficulties that will have to be overcome in the development and implementation of a personal carbon trading scheme, not least work to bring about acceptance of such a concept and considerable further research on many aspects of personal carbon trading. However, we believe that, through designing and implementing a sensitive and moderate scheme, these obstacles could be overcome.

1 Introduction

1. Personal carbon trading has been the subject of academic study for over a decade, but it is yet to be seen as a truly viable policy. Its potential is undeniable, but this enticingly simple idea has grown into a tangle of different proposals and has come up against genuine obstacles. However, where incentives to useful behavioural change by individuals remain disappointingly elusive, personal carbon trading has great potential as a policy tool.

2. In July 2006 David Miliband, appearing before our Committee as Secretary of State for Environment, Food and Rural Affairs, called for a ‘thought experiment’ on the idea, where the challenges could be explored and the concept tested against other proposals.¹ Defra developed a plan to research possible schemes in further detail, and personal carbon trading found a place on the political agenda. We hope that this Report contributes not only to the ‘thought experiment’ but also advances the prospect of personal carbon trading becoming a genuine policy option.

3. Thinking on personal carbon trading is still evolving; there is a need for further research and our conclusions reflect this. We have not attempted to address all of the practicalities of making a personal carbon trading scheme work; rather, we have focused on assessing the value of the concept, and how it can be made both politically and publicly acceptable.

4. We are grateful to all those who submitted evidence to the inquiry or appeared before us; their names are published at the end of this Report.

2 Background

5. In a personal carbon trading scheme, individuals are allocated an allowance of carbon from within an overall national cap on the quantity of carbon emissions produced by individuals within the jurisdiction. People surrender their credits as they make certain purchases that result in emissions, such as electricity and fuel. Those who need or want to emit more than their allowance have to buy allowances from those who can emit less than their allowance. The market effect encourages people to pursue energy efficiency in the home and to reduce their carbon emissions in other areas, such as transport. Over time, the overall emissions cap (and therefore individual allocations) can be reduced in line with international or national agreements.

6. Most of the work conducted so far on the feasibility of personal carbon trading has taken place in the academic domain. There are three key models (although all are variations on the basic concept described above): Tradeable Energy Quotas (TEQs) proposed by David Fleming; Domestic Tradable Quotas (DTQs) proposed by Richard Starkey and Kevin Anderson at the Tyndall Centre (a development of Fleming’s work); and Personal Carbon Allowances (PCAs) proposed by Mayer Hillman, Tina Fawcett and Brenda Boardman’s team at Oxford’s Environmental Change Institute.

1 Oral evidence taken before the Environmental Audit Committee on 19 July 2006, HC (2005–06) 1452, Q 293

7. Broadly, there are three issues that differentiate these approaches:

- **Participation:** Generally, this concerns whether the scheme is limited to individuals, or also allocates a proportion of the overall carbon allowance to companies.
- **Allocation:** The main areas of contention here are whether children should receive an allocation and how disadvantaged groups should be accounted for.
- **Scope:** This concerns which carbon emissions are included. For example, whether or not personal air travel and / or public transport are included in the scheme.

8. The Centre for Sustainable Energy summarised the differences between the schemes as follows:

	TEQs	DTQs	PCAs
Participation	Individuals (40% free) and organisations (60% tendered, principally to market makers from whom organisations then buy as required)	As TEQs	Individuals only (assumes organisations covered by another, unspecified scheme). At least 40% of UK emissions (i.e. all domestic plus aviation)
Allocation	Adults only equal per capita (plus organisations as above) on weekly rolling basis	As TEQs	Adults full equal per capita allowance; children under 18 half an allowance
Scope	Gas, electricity, coal, oil, road fuels	As TEQs plus personal aviation	Gas, electricity, coal, oil, road fuels, personal aviation, (not public transport)

Source: Simon Roberts and Joshua Thumim, Centre for Sustainable Energy, Report to Defra, 'A Rough Guide to Individual Carbon Trading: The Ideas, the Issues and the Next Steps', November 2006, p3

Alternative schemes involving individuals

9. Personal carbon trading is not the only mechanism that aims to encourage behavioural change in individuals through monetary penalties and rewards. A number of other options, some more developed than others, have identified the prospect of financial loss or gain as the most effective lever for persuading individuals to take responsibility for their own emissions. Although the most obvious of these is a systematic programme of 'green taxation', others take more direct inspiration from carbon trading. The two main alternative proposals to personal carbon trading, other than green taxation, are outlined below.

Cap and Share

10. Cap and Share was originally developed by the Irish NGO Feasta (the Foundation for the Economics of Sustainability). Cap and Share aims to achieve the same results as personal carbon trading (i.e. a guaranteed reduction in emissions), but in a form that claims to be simpler, faster and cheaper to implement. Under a Cap and Share scheme, a cap would be set for all UK carbon dioxide emissions. All adults would then receive a certificate entitling them to an equal share of the emissions under that cap. These certificates would be issued monthly, and could then be sold at banks or post offices. The certificates would then be bought by primary fossil fuel suppliers, who would be required

to buy and surrender certificates equal to the emissions from burning the fossil fuels they introduced into the economy. The price of the certificates would be built into the cost of fossil fuels, which would then cascade down through the economy. Consumers would therefore have to pay more for carbon intensive products and services, but would be compensated to an extent by the money from selling their certificates.

Hybrid Scheme

11. The Hybrid Scheme has been developed by Steve Sorrell of the Sussex Energy Group at the University of Sussex. The scheme aims to achieve environmental and economic benefits that are comparable with personal carbon trading, but claims to be a simpler and more practical alternative, both for the short- and long-term. Under the scheme, the EU ETS would operate alongside a second upstream scheme covering all other carbon emissions from fossil fuels, including emissions from households, other buildings and transport. The fossil fuel producers or suppliers would be responsible for the carbon content of fuel sold to downstream consumers not participating in the EU ETS, surrendering an allowance for each tonne of carbon. The cost of the allowance would be passed on to consumers, and would act like a tax on carbon-intensive goods and services.

Government Interest

12. David Miliband, when he was Secretary of State for the Environment, supported the idea of personal carbon allowances as a promising policy option:

It is easy to dismiss the idea as too complex administratively, too utopian or too much of a burden for citizens. Do we really want another Government IT programme? Are there not simpler ways of achieving the same objective by focusing on business to change their behaviour not citizens? And will it ever be politically acceptable?

But, as the Tyndall Centre's work shows, in the long term, there may be potential to make a system work, and in a way that is arguably more equitable, more empowering and more effective than the traditional tools of information, tax, and regulation.²

13. On 4 June 2007 Mr Miliband appeared before us, and was again asked about personal carbon allowances.³ He noted that the process was being carried forward through further research (for example, a pilot scheme was being undertaken by the RSA⁴) and the increased public debate on the matter. Mr Miliband also said he believed personal carbon trading was an idea that 'all the main parties will think about' when preparing their next manifestos.⁵

2 *'The Great Stink: Towards an Environmental Contract'*—Speech by David Miliband, Secretary of State for Environment, Food and Rural Affairs, at the Audit Commission Annual Lecture, 19/07/06 www.Defra.gov.uk/corporate/ministers/speeches/david-miliband/dm060719.htm

3 Qq 39–55

4 The RSA (Royal Society for the Arts, Manufactures and Commerce) operates a pilot and research project called CarbonLimited www.rsacarbonlimited.org/default.aspx

5 Q 48

My approach to this is that as a party of Government that has been in ten years it is right that we are looking for bold solutions. We have got to test them out, we have got to make sure they are sensible, we have to make sure that they are in tune with our values and the considerations of equity are paramount in that for my party, but it is right that we look at it. I do not think we should make any excuses about saying we have not decided but we think it is worth working through.⁶

14. In August 2006, Defra commissioned the Centre for Sustainable Energy to produce an initial analysis of some of the ideas and issues involved in the concept of personal carbon trading. The resulting paper, entitled *A Rough Guide to Individual Carbon Trading—The ideas, the issues and the next steps*,⁷ examined the advantages and disadvantages of different approaches and concluded that a personal carbon allowance and trading system had the potential, with further research, to achieve emissions savings in a fairer way than carbon taxes.

15. Defra told us:

The concept of a personal carbon allowance is one of a number of potential long term ideas being explored by the Government that could help to make individuals better informed about, and involved in, tackling climate change. [...] The Government remains committed to exploring the potential of personal carbon trading.

[...] The Government believes that the current system of taxation strikes the right balance between protecting the environment, protecting the most vulnerable in society and maintaining sound public finances. There remain many high-level questions about whether a personal carbon allowance scheme could be a proportionate, effective, socially equitable and financially viable policy option, particularly when compared or combined with existing policies and other options for controlling carbon emissions; whether it could be a practical and feasible option; how such a scheme might work in practice; and whether it would involve placing undue burdens on individuals.⁸

3 Evaluating personal carbon trading as a policy option

The need to restrain personal carbon use

16. The UK Government has committed itself to reduce carbon dioxide emissions to 20% below 1990 levels by 2010. Further targets in the proposed Climate Change Bill aim to reduce emissions by at least 60% below the 1990 baseline by 2050. This may eventually be raised as high as 80% following criticism of the 60% target as inadequate. Carbon emissions

6 Q 50

7 Simon Roberts and Joshua Thumim, Centre for Sustainable Energy, *A Rough Guide to Individual Carbon Trading: The idea—the issues and the next steps*, November 2006
www.defra.gov.uk/environment/climatechange/uk/individual/carbontrading/pdf/pca-scopingstudy.pdf

8 Ev 113

from households and personal transport account for around 40% of UK carbon emissions. **It is quite clear that if the Government is to stand the slightest chance of meeting its 2050 target it cannot afford to neglect the domestic and personal sector. Reductions in carbon emissions from business and industry will be meaningless unless accompanied by significant and equal reductions from households and individuals.** This is a matter of urgency. Ambitious targets must be accompanied by equally ambitious emissions reduction trajectories and bold policies.

17. Awareness of climate change and carbon emissions has increased significantly over the last decade. Opportunities to reduce emissions, through improving technology, consumer-friendly labelling, and grant schemes have multiplied. But, in general, individuals are relied upon to reduce emissions either through the promptings of their own conscience, or to avoid the rather minimal attempts at green taxation. The Energy Saving Trust's *Green Barometer* programme reveals that 80% of people believe that climate change is having an impact on the UK, with 75% feeling pressure to change the way they live because of climate change. However, while 39% say that they are 'doing a few, small things' to reduce their contribution to climate change, 40% are doing nothing at all.⁹

18. Dr Nick Eyre, Director of Strategy at the Energy Saving Trust, summarised the challenge the Government faced in changing attitudes:

There is a big group of people in the middle who are now *convincible* to take action but not convinced. They conceptualise the problem as your problem. They see it as an issue for government, perhaps for politicians, perhaps for big business. I do not think we have yet won the argument with the majority of the British public that it is also an issue for them.¹⁰

For behavioural change to take place individuals must accept a degree of responsibility for their own emissions.

19. There is no denying the commitment of certain individuals and the efforts made by many to change aspects of their lifestyles. However, **existing initiatives are unlikely to bring about behavioural change on the scale required, with many individuals choosing to disregard the connection between their own emissions and the larger challenge. We conclude that more radical measures must be introduced if emissions reductions from the individual and household sector are ever to make a meaningful contribution to UK targets. Personal carbon trading might be the kind of measure needed to bring about behavioural change.**

The potential of personal carbon trading

20. Under a personal carbon trading scheme, a cap is placed on total emissions from households and individuals, and allowances to the value of that cap are distributed within the market. In theory, irrespective of where and how emissions reductions are made, emissions will remain within the cap as further emissions rights will simply not be available. The Centre for Sustainable Energy noted that the potential of personal carbon

9 The Energy Saving Trust, *Green Barometer—Measuring environmental attitude*, April 2007

10 Q 102 [Dr Eyre]

trading lay in its ability to deliver guaranteed reductions in emissions from individuals, a ‘theoretical certainty’ that was not shared by all instruments.¹¹ **Personal carbon trading could guarantee a reduction in emissions because it places a ceiling on the carbon available for consumption, rather than seeking solely to reduce demand.**

21. One of the key strengths of a personal carbon trading scheme would be the incentive of saving (or even gaining) money by cutting personal emissions. Carbon accounts and statements, receipts at point of purchase, and energy bills, would show the positive results of a change in behaviour. As well as penalising those who emitted carelessly, a personal carbon trading scheme would reward those who were making the effort to change. In this sense it has a potentially progressive impact, unlike carbon taxes which are regressive and would apply to even low emitters, including the poorest households. The combination of incentive and visibility could be a potent mix for ensuring engagement in the scheme.¹² Personal carbon trading has a greater potential for engaging individuals in climate change than ‘upstream’ emissions trading schemes.¹³ This potential could spread beyond simple adherence to the scheme: personal carbon trading would spearhead behavioural change across a range of environmental concerns by bringing the environment to the forefront of decision-making and massively raising awareness of the challenge of climate change.

22. The RSA argued that personal carbon trading ‘would by its nature be engaging and, arguably, empowering as citizens hold for themselves the right to pollute’,¹⁴ an entitlement that individuals could control as they saw fit. Simon Roberts told us: ‘it also takes away from the issue any moral decision about whether flying to New York is any better or worse than any other kinds of carbon emissions—it just treats them all as equal and you make your own decisions’.¹⁵

23. Personal carbon trading would focus consumer attention on low-carbon alternatives. Provided that it was introduced as a long-term measure, the personal carbon trading allowance would also provide a clear signal to those individuals who could afford it that improvements and lifestyle changes involving a substantial capital outlay (such as installing certain types of home insulation or a microgeneration capacity) merited the investment—and the sooner it was done, the greater the reward. The potential to save, or even make, money could encourage action even from those with no interest in environmental issues, who would otherwise be difficult to motivate. These long-term signal should lead to significant investment in the market for green goods and services. All of this could lead to a more substantial action being taken, and sooner.

24. While the potential of personal carbon trading is evident, there is no doubt that there are many obstacles to its successful implementation, not least the administrative cost and effort. In their memorandum to us, the Tyndall Centre posed the following question:

11 Simon Roberts and Joshua Thumim, Centre for Sustainable Energy, *A Rough Guide to Individual Carbon Trading: The ideas, the issues and the next steps*, November 2006, p 8

12 Simon Roberts and Joshua Thumim, Centre for Sustainable Energy, *A Rough Guide to Individual Carbon Trading: The ideas, the issues and the next steps*, November 2006, p 8

13 Ev 83

14 Ev 56

15 Q 4

It has been argued that a tax or upstream auction with lump sum recycling would be significantly cheaper than implementing a PCT scheme [...] It is also argued that C&S [Cap and Share] would be cheaper to implement than PCT as it does not require the use of carbon accounts, carbon cards and carbon statements. The question thus arises, if the same degree of fairness can be achieved at a lower cost by other instruments, why consider a PCT scheme? The answer, I think, is that one would consider a PCT scheme if it brought with it additional benefits that justified any additional costs.¹⁶

Personal carbon trading must be cost-effective. More focused research will be required in order authoritatively to demonstrate where added benefit is in practice likely. In particular, the relative merits of personal carbon trading must be assessed against the Government's existing strategy of green taxation.

Personal carbon trading vs green taxation

25. We have been unconvinced of the Government's real commitment to implementing meaningful green taxation. In our Report into the 2006 Pre-Budget Report we concluded:

The picture is of an ongoing retreat from the Treasury's announcement in 1997 of a policy to shift the burden of taxation towards taxing environmentally damaging activities. As the latest figures show, the proportion of all taxation made up by green taxes is markedly less than in 1997, and is indeed at a lower proportion than as far back as 1994. This Pre-Budget does contain some limited announcements of rises in green taxes, but these are still very modest when set in the context of several Budgets and Pre-Budgets in recent years in which many environmental taxes have not even been raised in line with inflation.¹⁷

26. We made a similar point in our Report into the 2007 Pre-Budget Report. However, the shortcomings of existing environmental taxes should not be taken to mean that green taxation is inadequate as an instrument in itself. It is clear that the actual implementation of green taxation is preventing its full potential for reducing carbon emissions from being realised.

27. Green taxation and personal carbon trading both affect individuals. While carbon taxation is a cost even to those who produce very few emissions, carbon trading *rewards* those with low emissions, and only penalises those who exceed their allocation. Both methods use a stick, but personal carbon trading offers a carrot, too. The UK Energy Research Centre (UKERC) concludes that 'the key arguments in favour of PCA include its effectiveness, equity, distributional impacts and certainty of delivering savings'.¹⁸ Richard Starkey told us that the benefits provided by personal carbon trading, though different from those of taxation, were no less valid:

16 Ev 24

17 Environmental Audit Committee, Fourth Report of Session 2006–07: *Pre-Budget 2006 and the Stern Review*, para 61

18 Ev 67

You are saying to people that if they are a below average emitter they will have their surplus emissions rights that will have a value and they will be better off than they were prior to the implementation of this scheme.¹⁹

28. With personal carbon trading, allowances are given to you, which, if you are prudent, could be converted into money. It is this direct quality—a *personal* allowance, greater visibility, the opportunity to benefit personally—that convinces us that personal carbon trading would also lead to far higher levels of engagement. The Tyndall Centre argues:

The hypothesis regarding PCT and C&S [Cap and Share] is that actually holding emissions rights will increase individuals’ “carbon consciousness”, i.e. they will become more aware of their emissions and more engaged with and focused upon the task of emissions reduction than under other instruments. And if individuals spend more time and effort considering ways to manage and reduce their emissions, then emissions reduction may be more efficient than under other instruments.²⁰

29. Simon Roberts agreed that, in general, individuals are used to dealing with and absorbing price fluctuations from taxes, and need the provocation of a personal carbon allowance to make real decisions about their lifestyle.²¹ Steve Sorrell pointed out that:

[...] price elasticity of energy consumption is very low in this [household] sector, which means that carbon prices would need to be very high to have a significant impact on behaviour and emissions. The associated distributional impacts are unlikely to be acceptable.²²

These analyses suggest that ‘green’ taxes would need to be set at high levels in order to match the emissions-reducing potential of personal carbon allowances, seriously testing the public’s level of acceptance and leading to significant disadvantage among certain groups. **We believe that personal carbon trading has the potential to drive greater emissions reductions than green taxation. A carbon allowance could be more effective at incentivising behavioural change and engaging individuals in reducing their emissions than the price signals resulting from green taxation.** It is also important to bear in mind the difficulty of introducing significant green taxation at a time of general concern over the burden of taxation and in a period of economic slowdown. Even so, it must be acknowledged that a period of significant recession would dampen enthusiasm for most environmental measures, and that personal carbon trading would not be exempt from this trend.

30. Cap and Share offers personal carbon trading’s sense of empowerment and entitlement, yet imposes no direct form of ration or limit. Cap and Share also claims to guarantee emissions reductions through the setting of a slowly reducing cap. It relies on price signals transmitted down through the economy to deter customers from buying carbon intensive goods or services—with the same downstream effect as a carbon tax. We remain to be convinced that price signals alone, especially when offset by the income from selling the

19 Q 96

20 Ev 24

21 Q 4

22 Ev 97

certificate, would encourage significant behavioural change comparable with that resulting from a carbon allowance. Laurence Matthews argued that raising awareness ‘is only a means to an end, and not something we should have to rely on in order to implement a scheme’,²³ but awareness is crucial if behaviours are to change. A meaningful reduction in emissions will only be achieved, and maintained, with significant and urgent behavioural change.

31. We acknowledge that personal carbon trading could be complex administratively and more challenging to implement than green taxation and other alternative proposals. However, its potential to change behaviours and engage individuals means the Government should seriously and urgently assess how to take personal carbon trading forward.

Obstacles and difficulties

32. The challenges surrounding personal carbon trading are multi-faceted and will not easily be overcome. Beyond technical questions, personal carbon trading would have to overcome significant obstacles of political and public acceptance. The following issues rank among the most significant obstacles to the introduction of a personal carbon trading system:

- Coverage: who receives an allocation? Of what size? How frequently? Which emissions are included?
- System and operation: the need to provide efficient and reliable systems which can cope with massive amounts of data, processing transactions in different formats and providing real time updates of account levels. Such systems will also need to be resilient to fraud.
- Administration: the need to have a trusted and capable administrative body; and the sensitive setting of the allocation curve on the fine line between public acceptability and driving down emissions.
- Finding space in the policy landscape: many carbon emissions are already counted as part of existing policy instruments, such as the EU ETS. For personal carbon trading to work, it would need to fit with other schemes.
- Public acceptability: personal carbon trading would be a major initiative, affecting every individual in the country. Perceptions of the scheme as over-restrictive, unnecessary, inequitable, or burdensome, whether or not rightly founded, would prove very difficult to overcome in certain quarters.
- Engagement with the scheme: measures will need to be taken to ensure that individuals understand the scheme and know how to use it. The public’s involvement with the scheme will be needed, both for its effectiveness and for its acceptance. Mechanisms and strategies accounting for those who are unable or unwilling to participate will be needed.

- Ensuring equity: measures would have to be taken to prevent unfair distributional impacts, including protecting high risk groups such as those suffering from fuel poverty and people with disabilities, or deciding whether or not to provide children with an allowance. The extent to which issues of inequity are deemed to have been tackled successfully will significantly affect the public's acceptance of the scheme.
- Obtaining political commitment: the long-term commitment and political courage required of any government must be substantial if it is to introduce such a radical and potentially unpopular scheme. If it is to work, personal carbon trading will require support across a wide political spectrum.

Conclusion

33. We acknowledge the many difficulties that will have to be overcome in the development and implementation of personal carbon trading, not least work to bring about the public and political acceptance of such a concept; considerable further research is required on many aspects of personal carbon trading. However, we believe that, by designing and implementing a sensitive and moderate scheme, these obstacles could be overcome.

4 Towards a practical personal carbon trading scheme

Key considerations

Scope

34. The concept of a full economy scheme, such as that proposed under TEQs and DTQs is undoubtedly appealing. In the words of Richard Starkey of the Tyndall Centre, 'it is one scheme that encompasses the entire economy, so it is simple and efficient'.²⁴ Yet, the concept of such a scheme is so vast that it is difficult to envisage when, and how, it could realistically be implemented. The policy landscape is already increasingly crowded in terms of upstream carbon reduction mechanisms. The introduction of a full economy scheme would therefore necessitate a complex revaluation of participation in mechanisms such as the EU ETS. We do, however, have more or less a clean slate for a trading scheme purely between individuals. This is the territory in the policy landscape that has so far been neglected.

35. We believe that trying to solve all the problems involved in introducing an economy-wide system would unacceptably delay the introduction of a personal carbon trading scheme. The most realistic option is to introduce a scheme with restricted participation. Companies and other aspects of the economy could be covered by different trading schemes, with the consolidation of schemes considered at a later date once the principle of personal carbon trading had been satisfactorily established.

36. Even if different schemes which applied to different sectors were to operate on separate carbon currencies, they would still have an effect on each other. The Tyndall Centre calculated that:

Currently, EU ETS covers around 50% of the UK's CO₂ emissions. The proposed Carbon Reduction Commitment will cover slightly less than 10% of additional CO₂ emissions and the proposed Supplier Obligation, which might take the form of a cap and trade scheme, could cover around another 15% of CO₂ emissions. The Commission has proposed the inclusion of aviation emissions within the EU ETS in Phase 3 and the UK government has proposed that emissions from surface transport also be included. Hence, it is possible that the majority of UK emissions will be captured under one or other cap and trade scheme by 2013. [...] Implementing a PCT scheme in parallel with these trading schemes would thus result in the majority of UK emissions being covered by PCT and another trading scheme. In other words there would be a very considerable degree of "double counting".²⁵

The fact that there would be double counting in some parts of the carbon chain is not in dispute. However, evidence as to what impact this double counting would have on the efficacy of the instruments concerned seems to be inconclusive. While the Tyndall Centre and the Centre for Sustainable Energy both suggested in evidence that double counting could only be avoided by fundamentally altering the nature of the EU ETS to allocate emissions rights to energy end-users,²⁶ thus creating a single, economy-wide scheme, other witnesses argued persuasively that double counting would not present a significant problem. Professor Ekins believed that 'in principle, it does not seem to me that there is a problem if there is overlap',²⁷ while Matt Prescott of RSA told us: 'so long as the carbon market that was set up to support a personal carbon trading scheme was a separate currency from the EUAs of the ETS and EU ETS, then the two schemes would be able to operate side by side'.²⁸ Further research is required in this area. However, on the face of it the issue of double counting would not reduce the effectiveness of personal carbon trading or detract from the other advantages of the whole concept.

37. We do not believe that double counting is a serious handicap. However, we recognise that concerns over double counting of carbon emissions do exist and need to be addressed. In the meantime they must not be a barrier to investigating and developing the concept of personal carbon trading.

The Climate Change Bill

38. Any consideration of personal carbon trading will need to take place in the context of the Climate Change Bill. Although the Bill will contain enabling powers for introducing new trading schemes through secondary legislation, the Government has made clear that it does not envisage using these powers for introducing a personal carbon trading scheme. **We agree with the Government that the introduction of a personal carbon trading**

25 Ev 22

26 Ev 22 [Tyndall Centre]; Q 11 [Simon Roberts]

27 Q 204

28 Q 175

scheme should be a matter for primary legislation, rather than using the delegated powers contained in the Climate Change Bill.

39. However, the provisions of the Climate Change Bill would provide an appropriate framework for the setting of caps and budgets under a personal carbon trading scheme. The Bill provides for a statutory basis of five-year carbon budgets, setting binding limits on emissions, with three successive budgets (set 15 years ahead). This system of long-term, fixed national budgets is exactly the framework that would be required for setting caps for personal carbon trading. Personal carbon trading caps could be set as a sub-category of the national budget. The Energy Saving Trust told us that the targets under the Climate Change Bill ‘would provide the necessary long-term emissions reduction signal to business and individuals and should therefore be consistent with any PCA allocation’.²⁹ Personal carbon trading caps would need to be subject to the same accountability and independent scrutiny as we have insisted upon for national carbon budgets.³⁰ **We believe that the setting and managing of caps for personal carbon trading would be wholly consistent with the provisions for emissions budgets and targets as set out under the draft Climate Change Bill.**

Technology

40. Although there is no direct precedent for a personal carbon trading scheme, there are established technologies that fulfil the functions required, not least the banking and transaction system itself. Richard Starkey was clear that this could be easily adapted for a personal carbon trading scheme: ‘technologically you are using a well-established tried and tested credit card system, all the readers are in petrol stations and you are using systems of direct debit which are very well understood’.³¹

41. The CSE have also found the success of store loyalty cards particularly encouraging:

Estimates vary between 65% and 85% for the proportion of households which have at least one loyalty card. However, the scale and rate of take up of loyalty cards is probably less relevant to individual carbon trading systems than the findings that: (a) people seem perfectly prepared to buy things using more than one card per transaction, and; (b) these companies have established enormous databases which securely store personal data and vast amounts of transaction data.³²

The CSE calculated that the Tesco Clubcard database collects some 50 billion pieces of data per year. Based on the Tyndall Centres’s estimations of transaction figures, the CSE calculated that a personal carbon trading database would have to process 15 billion pieces of data per year.³³

29 Ev 37

30 Environmental Audit Committee, Seventh Report of Session 2006–07, *Beyond Stern: From the Climate Change Programme Review to the Draft Climate Change Bill*, HC 460, para 131.

31 Q 84

32 Simon Roberts and Joshua Thumim, Centre for Sustainable Energy, *A Rough Guide to Individual Carbon Trading: The ideas, the issues and the next steps*, November 2006, p 23

33 *ibid.*

42. The most significant operational difficulty lies in the administration of allowances and accounts. Simon Roberts told us:

We have a very good transaction system and we have a very good accounting system [...] you could create a carbon account and you could link it up with the transaction systems and you would not need to build anything new to do that. [...] Where I think you have an issue is with the allocation system, how do you identify and get the right amount of carbon credits to the right accounts smoothly with a tolerable level of fraud.³⁴

This view was shared by Richard Starkey:

Perhaps technology is not the biggest challenge, it is more the administrative challenges of enrolling 45 million people into a scheme, giving them a card, dealing with lost and stolen cards, closing people's account when they die or they emigrate, or if people are entitled to emissions when they are 18, making sure that when they hit the age of consent their account is open for them.³⁵

43. The Government operates large-scale systems, but a great part of the expertise in managing systems of this kind resides in the private sector. This expertise will need to be harnessed, and it may also be appropriate for the private sector to play a substantial role in the operation of a personal carbon trading scheme. An expert seminar run at the RSA concluded that, while Government could be responsible for allocating credits and data protection, the private sector could undertake day to day operation of the scheme.³⁶ The London Congestion Charge was cited as an important example. Like personal carbon trading it is a statutory scheme, involving multiple transaction methods, but which has been successfully operated by the private sector (admittedly at a cost that some people consider unacceptably high).

44. The RSA is enthusiastic about the participation of business, in particular the role the banks could play:

We [...] envisage a major role for business in organising and facilitating the personal carbon market. The opportunities associated with this would be dictated by its governance, but must exist in order to provide an incentive for businesses to seek to play a role in the operation of the scheme. Given the likely role of existing banking and IT infrastructure, a range of organisations would be in a strong position to play a role. [...] There is a strong case to be made for banks and credit card companies to handle the PCAs. Banks have the system and knowledge in place.³⁷

45. If the Government takes advantage of the expertise and infrastructure of the private sector, the technical and operational aspects of a personal carbon scheme could be easily realised. **We are confident that the technical and operational challenges of**

34 Q 7

35 Q 84

36 RSA Carbon Limited *'Technology for Personal Carbon Trading—Outputs from an RSA expert workshop—December 2006'* February 2007, p 6 www.rsacarbonlimited.org

37 Ev 57

implementing personal carbon trading can be overcome. Suitable technology and systems already exist. Although a personal carbon scheme would operate on a larger scale than most existing schemes, the concept has been successfully demonstrated.

46. The private sector could play a vital role in operating a personal carbon trading scheme. Further research and consultation is required in order to determine precisely what the most appropriate role for business would be.

Achieving acceptability

47. The current debate on personal carbon trading has largely ignored crucial questions of acceptability. CSE, in their report to Defra, said:

In assessing the current state of the debate on individual carbon trading, we found a range of interests largely focused on the operational minutiae of specific schemes and on examining the minor theological differences between them. Yet the differences between the schemes appear to be less important at the stage than the largely untested assumptions shared by them all about public responses and political feasibility [...] It is important at this stage to ground the debate quickly in considerations of political and practical feasibility – and that all potential policy instruments for achieving UK carbon emissions goals are considered on a similar basis.³⁸

In considering the question of public acceptability, it is important to recognise that we should not be trying to drop a fully-formed, all-encompassing scheme into place. The necessary policy framework does not yet exist, the operational challenge would be immense, and such an approach risks overwhelming and alienating the public. **We agree with the Centre for Sustainable Energy that it is crucial to shift the debate away from ever-deeper and more detailed consideration of how any personal carbon trading scheme could operate towards the prior questions of how it could be made publicly and politically acceptable. It is these questions that will ultimately decide the viability of personal carbon trading, and until they have been fully analysed and properly answered, further work on the operational details of schemes adds little value to the main debate.**

48. Personal carbon trading will require sustained support across a broad political spectrum. There would need to be consensus both on the need to implement the scheme, and on the importance of sticking with the scheme in difficult periods. In order for the scheme to have a meaningful effect on behaviour, the public would need to accept it as a long-term measure, rather than as an interim policy that could end at the next election. This consensus will not be easy to achieve, although the Climate Change Bill will go some way to creating the right conditions. Professor Ekins told us:

The Climate Change Bill is a very important political innovation because that will make it more difficult for politicians to opt out of the agenda altogether. I think it will mean that politicians, given these targets, if they do not like one set of policies for

³⁸ Simon Roberts and Joshua Thumim, Centre for Sustainable Energy, *A Rough Guide to Carbon Trading: The ideas, the issues and the next steps*, November 2006, p 3

carbon reduction, they will have to put forward another set of policies for carbon reduction instead of just saying, “We do not like that.” That is potentially an important discipline.³⁹

49. Political acceptability will inevitably rest on public acceptability. Although Simon Roberts told us there was an increasing public appetite for Government intervention to help people reduce emissions,⁴⁰ personal carbon trading is a radical step. Recent experiences of public opposition to road pricing and fortnightly waste collections suggest that any move to implement carbon trading or extensive carbon taxation could be very difficult indeed. Research by the Energy Saving Trust revealed that only a third or less of individuals questioned thought that measures such as green taxes (34%), road pricing (tolls and congestion) (30%) and carbon rationing (28%) were socially acceptable.⁴¹ Professor Ekins told us:

I do not think that either of them [green taxes or personal carbon trading] are politically acceptable at the moment. It is not politically acceptable to impose policies that will cause people to reduce their emissions. That is the baseline where unfortunately we are.⁴²

50. Public opinion may be hostile to any policy instrument designed radically to reduce emissions from individuals. The Government must be courageous on this point. Widespread public acceptance, while desirable, should not be a pre-condition for a personal carbon trading scheme; the need to reduce emissions is simply too urgent. However, significant opposition could undermine any proposal. Further research is required in order to obtain a more detailed picture of the extent of public resistance to personal carbon trading and in what ways this opposition could be tackled.

51. Our witnesses agreed that opposition to personal carbon trading often stems from a lack of understanding either of the *need* for such a mechanism, or of *how* the scheme would actually work. Acceptance increases if this is explained. Richard Starkey’s experience was that ‘people’s hostility to a personal carbon trading scheme is inversely proportional to the amount of detail they have about it’.⁴³ Simon Roberts told us that arguments against personal carbon trading are usually founded on general arguments against constraining carbon use, rather than anything solely attributable to personal carbon trading:

It is not a question of doing this or nothing but it is a question of doing this or doing those other things instead—would you rather have a carbon allowance or a heavy tax on petrol and domestic fuel? That is, in a way, the kind of choice you need to be putting in front of people rather than, “What do you think about this?”⁴⁴

52. Opposition to personal carbon trading could be reduced if the public could be convinced of three things. First, that it is absolutely essential to reduce emissions;

39 Q 218

40 Q 48

41 The Energy Saving Trust, *Green Barometer—Measuring environmental attitude*, April 2007

42 Q 202

43 Q 99

44 Q 17

second, that this can only be achieved if individuals take personal responsibility for reducing their own emissions; and third, that personal carbon trading is a fairer and more effective way of reducing personal emissions than alternatives such as higher taxes. The public must be persuaded of the first two parts of this argument as soon as possible if the Government is ever to convince them of the third. Persuading the public depends on perceptions of the Government's own commitment to reducing emissions, and of the priority given to climate change in its own decision making.

Emissions caps

53. The allocation curve of the personal carbon budget will need to be set sensitively. A cap that is too taxing, too soon, risks breaking any fragile covenant between public and government on this matter. On the other hand, the later action is taken the steeper the curve will need to be. Paul Allen, of the Centre for Alternative Technology, told us:

The optimum carbon descent steepness curve is one that begins immediately. The longer we leave it, we are moving away from the optimum because we are making the descent steeper and steeper, and therefore the social transition harder.⁴⁵

Also, the Stern Report noted that early benefits can be gained by disproportionate effort at the beginning, making a stricter cap, earlier, even more attractive. A balance will have to be struck between achieving meaningful carbon emissions and gaining public acceptance of the scheme.

54. Even after the initial phase, the setting of the allocation curve is not as simple as drawing a straight line down to the 2050 target level. Complex considerations of distributional effects and 'crunch points' must be taken into account if the curve is to stimulate the correct balance of emissions reductions and public engagement. Simon Roberts of the CSE told us:

All those things [such as choosing not to go on holiday] are relatively low cost, if not zero cost, and therefore the cost of getting down that curve to start off with may be very, very low, in which case the cost of carbon in that particular system would be low as well. What we do not know at the moment is where you start the hits and the marginal abatement cost curve. Where does it suddenly get steep and how does that distribute across different types of households, different types of people? Some people have very immediate, very high costs to reduce emissions and other people have an awful lot of spare capacity to cut emissions through choices they are making which are actually just about habit and behaviour, and I think you need much more of that kind of information to start to map out who would be suffering and where the squeeze would be depending on what curve you introduced.⁴⁶

Although personal carbon trading aims to drive change in a way that less restrictive policies could not, careful consideration will need to be given to the point at which further change becomes unachievable at a reasonable cost.

45 Q 153

46 Q 6

55. If a personal carbon trading scheme is ever to see the light of day then the first stages of the scheme, at least, will need to focus on gaining public and political acceptance. Any scheme must limit emissions, but we must accept that initially caps might be more lenient than is ideal, in order to achieve public acceptance. Once the scheme is better established, more demanding caps could be set. This approach will have to be carefully balanced against the need to ensure the scheme effectively reduces emissions in line with national targets.

Emissions included under the scheme

56. Emissions that could realistically be included under a personal carbon trading scheme—although with varying degrees of difficulty—are:

- Domestic energy consumption
- Road fuels
- Air travel
- Public transport

In each case, an approved rate of exchange would need to be set between the product or service purchased and the number of carbon allowances to be surrendered. This would need to vary for different fuels (so a green electricity tariff would require the surrender of fewer allowances); or, in the case of aviation and public transport, the length or method of travel. Retailers would calculate the carbon value of a product or service according to this rate of exchange, and the consumer would surrender carbon allowances accordingly. Individuals themselves would not be required to make complex carbon footprint calculations for their purchases.

57. Some types of emissions would be easier than others to include under a personal carbon trading scheme. Household electricity and gas use would be measured by the power companies as usual, the carbon allowance total calculated according to the energy mix and amount consumed, and communicated to customers as part of their normal bill. Gas canisters and bags of coal would be worth a certain amount of carbon units. For road fuels, the cost per litre would be calculated firstly in pence, and secondly in carbon, with the customer required to surrender a certain number of carbon allowances at the same time as paying for the fuel. Aviation would involve single transactions, comparatively few in number when compared with public transport in general, and highly significant in terms of carbon impact. However, the inclusion of aviation under a personal carbon trading scheme would present inevitable difficulties as to which flights should be eligible, and how the system could be fairly implemented beyond domestic flights. These difficulties would need to be overcome not only due to the carbon intensity of air travel, but also because the use, or otherwise, of air travel would represent a key variable for individuals in balancing their carbon allowance.

58. It is less clear whether it would be possible, or perhaps more crucially, worthwhile, to apply personal carbon trading to the use of public transport. Although the development of systems such as the Oyster card have proved that quick and easy surrender of units (whether cash or carbon) for individual journeys is possible, there remain concerns over

the inclusion of public transport. The memorandum from the Environmental Change Institute listed a number of reasons why it might not be prudent to include public transport in a personal carbon trading scheme, at least at the beginning of its life. Among these were:

Surface public transport comprises only a small percentage of individuals' total emissions;

Inclusion of public transport could easily double or treble the total number of carbon credit transactions per year, while only affecting a small proportion of personal emissions;

It is difficult to accurately calculate the emissions associated with an individual's travel on different public transport modes due to fuel choices, occupancy and distance travelled.⁴⁷

59. Certainly it might be possible in future stages of a scheme to envisage the inclusion of some areas relating to public transport: most simply, perhaps, substantial purchases such as long distance rail travel or season tickets. However, any such move would need to be carefully analysed in order to assess its impact on the shift towards lower-carbon lifestyles. It is important that the public are not faced with a mixed signal: although the surrender of allowances for public transport would be minimal in comparison to the purchase of road fuels, a public transport system that was entirely exempt from personal carbon allowances would provide a far clearer incentive for individuals to leave their cars at home.

60. The more types of emissions included at the beginning of a scheme, the more complex the implementation of the system, and the greater the leap of faith required from the public. A careful balance will need to be struck: on the one hand, a scheme encompassing many emissions risks making individuals feel under siege and confused by comparing different types of emissions; on the other hand, the more emissions covered under personal carbon trading, the greater the flexibility individuals would have in deciding how to manage their emissions and carbon allowance.

61. Stern has shown that the sooner action is taken, the more effective it can be. It is for this reason that we believe it is more important to implement a reduced scheme than to delay action while worrying over how to develop the perfect, fully-formed, all-encompassing scheme. **We believe that personal carbon trading could be made workable if it was acknowledged that it may not be possible to cover all eventualities from the very beginning. A basic programme covering certain emissions could be a useful stepping stone to a more comprehensive scheme. We recommend that the Government investigate the possibility of a phased initial implementation, including all individuals, but concentrating on certain basic areas of carbon use, such as household energy. The scheme could then be developed, expanded, and integrated with other schemes over time, as appropriate.**

Access, participation and engagement

62. Individuals who are either highly environmentally or fiscally conscious are likely to engage more closely with personal carbon trading, tracking their carbon use and managing their accounts. To a degree, they would stand to benefit from this, in the same way that any financial management provides benefits. Most individuals will surrender allowances at point of purchase with little further interaction. Some individuals will not understand the system and will require assistance and encouragement.

63. Professor Ekins was confident that the association between carbon emissions and financial loss or gain could bring about significant engagement with the scheme.

If people understood that carbon was money, they would take it very seriously. They would participate in any scheme that was set up. [...] The challenge will be to really connect that very abstract, transactional environment which will resemble the money environment with people's energy use and perceptions of energy use and a recognition that, when they turn the central heating up, that will mean that this parallel money as well as their normal money is going to be hit. The big difference about the parallel money is that it is rationed. There is a fixed amount out there in the nation and they will need to buy in a market that is fixed. That is quite a different kind of market to the one people are used to.⁴⁸

64. A significant misconception is the amount of active 'trading' required in order to participate in the scheme. Unless an individual chooses to involve themselves in the speculative buying and selling of carbon allowances, the trading aspect of the scheme is largely invisible. An individual will have a certain balance in their carbon account. When they make carbon purchases, allowances are surrendered from this account. If the individual's carbon account is empty, allowances must still be surrendered at point of purchase. The retailer will automatically buy carbon allowances on the customer's behalf, and surrender them immediately. The cost of the carbon allowances bought in this way will be added to the amount paid by the customer. The customer does not have to actively search for extra allowances, though the price of these point of sale allowances will vary with the carbon market.

65. This process would also be used to account for those who were unable or particularly unwilling to participate directly in the scheme. Richard Starkey explained how it would work in this case:

If you do not want to think about emissions rights you do not have to think about emissions rights. Just one thing has to happen. Your emissions rights are automatically placed into your electronic account, let us say, once a month. Either you yourself, or if you are not capable of doing that, someone on your behalf can set up an arrangement whereby those emissions rights are automatically sold to a bank as soon as they hit your account. You make that one arrangement and then for the next 15 or 20 years, however long you are alive, you do not have to think about it again. Then whenever you go to a petrol station to buy petrol, or pay your electricity

bill, you simply just pay in money. The electricity company or the petrol station is adding on the cost of the emissions rights to your bill.⁴⁹

In this way, non-participants still receive their allowance of carbon, and still receive money when these allowances are automatically surrendered without being used. They simply pay higher prices for the products and services included under the scheme. They will experience the scheme as a carbon tax, but with an extra sum of money arriving in their accounts every month. The personal carbon trading scheme is not undermined as it still has a full number of participants, who are still paying for their carbon use.

66. This ‘pay as you go’ approach to carbon trading would have some disadvantages. Firstly, it is less effective at raising public awareness and understanding of carbon use, because the carbon transaction is less visible. Secondly, customers would have to buy carbon at its market price. If carbon prices were high, customers could be worse off than if they had used their own allowances to pay for goods.

67. Personal carbon trading will pose particular difficulties in accommodating and engaging the financially excluded. It is unrealistic to ask those who find it difficult, or even impossible, to manage their standard finances, to also understand and manage a carbon account. While the possibility of a ‘pay as you go’ option goes some way to relieving these difficulties, it is imperative that any personal carbon trading scheme includes a detailed and determined strategy for assisting the financially excluded. Research is required to assess the likely proportion of people who would choose this type of option, and whether they would face any significant disadvantage as a result. It would be important to make the scheme sufficiently simple and accessible that remaining involved seemed as easy, or indeed easier, than opting out.

68. A regular issue (for example weekly, or monthly) of allowances onto the market should ensure that the allowance market remains fluid and that there is minimal risk of the market itself ‘running out’ of allowances. However, as with any market, regulation would be required in order to safeguard against market failure, and to provide contingency plans in the case of extraordinary events such a particularly cold winter.

69. Personal carbon trading is often associated with the idea of a carbon card. The carbon card is one of the most regularly cited manifestations of a personal carbon trading scheme, and such a card could indeed play an important role in bringing visibility to the scheme, as well as engendering a sense of ownership. Matt Prescott explained why a card could have an important role to play in achieving public acceptability for the scheme:

The purpose of the scheme is very much to give ownership down to the level of the individual and the community and enable them to control it, hence the interface would need to be something that was comprehensive for the scheme but also comprehensible from the point of view of individuals. The original suggestion of a stand-alone credit card, of sorts, which has been talked about for probably the last 12 months would give you that “in the wallet” visibility that you are involved in the scheme.⁵⁰

49 Q 74

50 Q 164

However, a personal carbon trading scheme would need to operate on a number of different platforms in order to facilitate different kinds of transactions: for example, allowances could be surrendered via a carbon card (at a petrol station, for instance), via direct debit (for electricity bills), or through an internet transaction (for online purchases). All of these transactions would draw on the same carbon account. Matt Prescott emphasised the range of transactions required:

It is obvious to see that domestic household utility bills are not often paid using one of the existing card systems but more often either through a pre-paid meter or direct debit and hence we would be looking at a mixture (a) of technologies and (b) of interfaces that we would need to tie in in an understandable way, such that the scheme looked neat and tidy to the public but actually properly did dovetail a number of different infrastructures in order to deliver that.⁵¹

This range of interfaces is also important for the public's acceptance of the scheme: it makes the scheme more versatile and accessible, meaning that the public can engage with the project in the way which is most convenient for them. This extends not only to transactions, but also to the ways in which individuals can access and manage their account.

70. Some of the most vehement objections to personal carbon trading are based on fears of state control and data storage. However, there is no reason why access to a carbon account and use of a carbon card could not be protected with some of the same measures used to protect bank accounts and credit or debit card (i.e. such as passwords and pin numbers) with the similar protection against fraud and even provisions for lost and stolen cards.⁵² It would be practically impossible to eliminate fraud entirely, but measures can be taken to manage and minimise the risk of fraud to the point where security is no longer a barrier to public acceptability.

Supporting measures

71. Public acceptability for personal carbon trading can only be achieved if the public feel they are being supported in meeting the requirement placed upon them by Government. The public will need to be given help and guidance to achieve these carbon reductions. Nick Eyre told us:

Personal carbon allowances would set an overarching instrument for individuals and carbon but that would not address every barrier to behavioural change and investment [...] There would still be a need for specific interventions.⁵³

Similarly, the Environmental Change Institute noted in their memorandum that 'If PCA were to be introduced, it would not be a stand alone policy. It would simply form the umbrella mechanism within which a wide range of other policies would operate'.⁵⁴

51 Q 164

52 A number of witnesses supported the view that existing banking technology could meet requirements of identity and account protection. See Qq 37–8, Q 76, Q 162, Ev 74.

53 Q 107 [Dr Eyre]

54 Ev 66

Personal carbon trading provides only the incentive to reduce emissions, not the means. It is clear that a personal carbon trading scheme would need to be accompanied (and, indeed, preceded) by a raft of other policies. The Government would need to make sure that the opportunities and resources to help people reduce emissions were readily available and well publicised.

72. Most importantly, individuals would need to have the knowledge and means to assess their own carbon footprint and where they stood to fall in the personal carbon market. Nick Eyre was insistent on this point:

If people do not know what their carbon footprint is, they do not know whether they would be a buyer or a seller within a trading scheme. That is a pretty fundamental thing that they need to understand before they can engage with the system.⁵⁵

The obvious tool for this purpose is a carbon calculator. Defra have recently introduced their Act on CO₂ calculator, which enables individuals to calculate their carbon footprint from home energy use and transport patterns. **We commend Defra's Act on CO₂ calculator.⁵⁶ It is accessible, engaging, and simple to use. Under a personal carbon trading scheme it could be adapted to provide further information related to personal carbon allowances, and link to personalised advice on how to save carbon units.** This could build upon the important work already being undertaken by the Energy Saving Trust. Nick Eyre told us:

People need help to figure out how to reduce their emissions. The Energy Saving Trust programme, which advises people on what their energy use is, what their carbon footprint is, and, more importantly, how it can be changed, provides the key piece of information that any individual needs to participate effectively in a personal carbon allowance market. Until we have that sort of information the market will not work because it is a fundamental principle of markets that they only work properly when people are informed.⁵⁷

The Energy Saving Trust also suggested that better metering systems would be essential in order to rise the energy and carbon awareness of households.⁵⁸ **We firmly support the introduction of smart metering in households. This would be an essential supporting measure of a personal carbon trading scheme. At any rate, smart metering should be introduced as soon as possible in order to raise carbon consciousness and thereby lay the ground for carbon restricting measures.**

73. We also await with interest the outcome of new programmes providing individually-tailored, paid-for domestic assessment services, such as the pilot being planned by the Energy Saving Trust, and the Green Concierge Service running as part of the Mayor of London's Green Homes Initiative.⁵⁹ These schemes aim to provide, at a cost, a personalised

55 Q 105

56 The Carbon Calculator can be found at: actonco2.direct.gov.uk/index.html

57 Q 114 [Dr Eyre]

58 Ev 37

59 See the Energy Saving Trust www.energysavingtrust.org.uk/help_and_support/green_homes_service for further details of their pilot, and the Mayor of London www.londonclimatechange.co.uk/greenhomes/green-concierge-service/ for details of the Green Concierge Service.

carbon footprint assessment (in the case of EST, also including emissions from transport) with structured action plans and follow-up assistance. Such schemes will provide useful data on the effectiveness of more personal and structured forms of advice, and on the willingness of individuals to pay for energy-saving services. Under a personal carbon trading scheme, more direct programmes such as these could have a significant role in helping households to meet the challenges and opportunities offered by personal carbon trading.

74. It is not enough to know one's carbon footprint and understand its implications for the personal carbon allowance. Individuals must also be provided with the opportunities to reduce their emissions. In part, this can be resolved by the provision of information and advice. For changes involving significant capital outlay, such as home insulation or the installation of microgeneration capacity, assistance and grant schemes may be required. The Environmental Change Institute emphasised that 'new and existing efficiency and carbon emissions standards would [need to] continue to be tightened'.⁶⁰ In the future, policies will need to go beyond facilitating changes to existing lifestyles, and focus on encouraging significant changes in lifestyle trends:

Transport and planning policy would need to find more effective ways of encouraging the use of lower carbon modes and, eventually, lower mobility lifestyles. Not only would these policies enable and encourage people to live lower carbon lives, they could also be used comprehensively in advance of PCA to broaden the low carbon options available.⁶¹

Personal carbon trading could form the backbone of a wide programme of policies designed to facilitate the move not only to low-carbon households, but also to a low-carbon economy.

75. Finally, any development of a scheme would also need to take into account the costs and demands on business, especially fuel retailers, energy providers and travel services, arising from personal carbon trading. The handling of carbon credits will require training, equipment and publicity. Government will have to assist in providing these facilities in order to make any proposals to introduce personal carbon trading palatable to the businesses who will have to implement the scheme as part of their transactions with customers.

Accounting for disadvantaged groups

76. The question of 'fairness' will be central to the public acceptance of a personal carbon scheme. Emissions from the domestic sector will have to be reduced or constrained in some way if we are to meet our emissions targets. The question is whether personal carbon trading would create greater inequalities than any other scheme used to do this. Professor Ekins was adamant that there was little chance of finding a truly 'fair' scheme:

60 Ev 66

61 Ev 66

No one model is going to be perceived by everybody to be fair. Fairness is something that is fought out in the political process day by day. This will have to be too.⁶²

77. Richard Starkey identified many groups who could feel disadvantaged by an equal *per capita* allowance, most notably those suffering from fuel poverty. He insisted that the cause of such inequalities needed to be carefully assessed:

There is the specific issue of fuel poverty which is well recognised, but again it is important to recognise that it is an issue under personal carbon trading and it would also be an issue under carbon tax and it would also be an issue under an upstream carbon emissions scheme. So if it is a problem, it is a problem that is not specific to this particular instrument. I think it is important to distinguish between problems specific to this particular instrument, for instance enrolling 45 million people under the scheme and problems that are generic to the whole gamut of these instruments.⁶³

78. The memorandum from the Centre for Sustainable Energy also recognised that the existing policy landscape was unlikely to favour any instrument of this kind:

None of these situations [of inequality] are the result of PCAs; they are simply the reality of a society and an energy market—already blighted by inequalities and socially regressive pricing practices. Indeed, these situations are the reality within which any policy designed to constrain and cut individual carbon emissions will have to act.⁶⁴

79. Personal carbon trading will inevitably highlight existing inequalities of income and opportunity. Any instrument designed to restrict and reduce domestic carbon emissions would raise the same concerns and it would be wrong to reject the proposal of personal carbon trading because of these difficulties. As with any other policy, these inequalities will need to be identified, assessed and, where appropriate, compensated for. However, it must be remembered that a personal carbon trading system could be much less onerous for disadvantaged groups, including those suffering from fuel poverty, than alternative policies designed to cut carbon emissions, such as green taxes.

80. In all the proposals for personal carbon trading, allowances are hypothetically distributed on an equal *per capita* basis: every adult individual receives the same allowance, irrespective of his or her circumstances. It is from this basis that allowances are then bought or sold, to account for the inevitable inequalities in carbon usage. Richard Starkey explained that an equal *per capita* allowance, although not perfect, was perhaps the most straightforward solution:

It really is not the case that it is done and dusted by saying it is completely fair for everybody getting the same amount of emissions rights. If you do not go down that route on the other hand you get into the whole knotty problem of how do we adjust everybody's equal share to take account of their particular circumstances and one

62 Q 208

63 Q 85

64 Ev 2

can imagine getting bogged down in lots of disputes and lots of bureaucracy about that.⁶⁵

However, while an equal *per capita* allowance may be the fairest method in a philosophical sense, its failure to account for individual circumstance may make it seem less appealing from a political point of view.

81. Varying allowances would, however, create a raft of difficulties. Firstly, there is the difficult decision of to whom to award extra allowances, how much to give, and the bureaucratic challenges of administering this. Secondly, there would be the near impossible task of satisfying all parties that their interests were being adequately taken into account, and thereby maintaining support for the project. Thirdly, and most crucially for the success of the scheme, there is the question of how individuals can be encouraged to reduce their carbon emissions if they know that there is a long list of exceptions. Dr Fawcett summed up the resentment which might arise from such a set-up:

If you go round saying that a person who has ten times higher emissions than me is allowed a lot more because there are all these factors that are problematic for them, like they have a big house and they live in the country or they simply have to drive 100 miles a day or whatever, how am I as a low emitter going to feel about that? Pretty irritated, I would think. There are more low emitters than there are high emitters. There are moral reasons for not varying the allowance, except perhaps in a small number of cases. The practical reasons completely dwarf the argument and principle about why you simply could not run a system like that.⁶⁶

Having said this, there could be simple allowances (comparable to those used in the tax and benefits system) that give extra credits to groups, such as parents with children, the elderly, and disabled people, whose greater need for private transport and warmer homes is unambiguous.

82. In order to be effective, a personal carbon trading scheme will have to impose a degree of inconvenience and additional cost. The urgency with which we need to address climate change means the Government should not be afraid of this. When accounting for distributional impacts it will be essential to strike a balance between addressing genuine difficulty and allowing the inconvenience that will encourage change to persist. The groups in genuine need of support must be identified.

83. Identifying this genuine need is not as simple as assuming that those with lower incomes will inevitably be worse off under such a scheme. It is important to remember that individuals will not incur any cost for carbon provided they remain within their allowance, and could even gain money if they have excess allowances to sell. The RSA reflected that:

There is received wisdom and some research to show that carbon emissions and socioeconomic status have a positive correlation—those on higher incomes and in more stable social conditions are responsible for higher carbon emissions. They are more likely to live in a larger house, have more than one car and travel frequently by

65 Q 86

66 Q 195

air. Those in lower socioeconomic groups use less carbon. This is one of the attractive elements of the scheme—it is progressive and largely redistributive. It would be socially fairer than a flat tax on carbon, which would penalise those causing fewer emissions in the same way as those causing high levels. However, there are some who are the exception to the rule, and it is important to distinguish between those who choose to use more carbon, due to lifestyle choices, status and luxury, and those who have few or no relevant choices to make due to housing condition or lack of public transport.⁶⁷

84. It is essential this general redistributive trend is emphasised if personal carbon trading is to gain public acceptance. The Centre for Sustainable Energy encountered a number of negative reactions to the idea of a scheme, of which the two most fervently held were: ‘the poor would be trading their deprivation for cash’ and ‘this is just another scheme/scam/rip-off where the rich can pay to pollute and the poor suffer’. The CSE countered these reactions as follows:

Such reactions, usually driven by well-meaning social consciences, unfortunately ignore the facts that at present the poor receive no cash for their deprivation and the rich currently pollute without paying anyone. Under a system of PCAs, at least the poor would, on average, be paid for their deprivation. And, on average, it would be the rich who would be paying the poor in order to sustain their carbon-intensive lifestyles. [...] These facts do not make such a system perfect and PCAs will certainly not create an ‘equal society’. But by starting from an equitable distribution of rights to emit carbon dioxide amongst the population, it is undoubtedly socially progressive.⁶⁸

One way to persuade the public of the generally progressive nature of PCT would be to publicise, at the outset, examples of a range of typical households whose lifestyles in terms of travel choices and home heating, etc., are commonplace, and who can be shown to be net gainers from the scheme.

85. It would be wrong to assume, nonetheless, that there will be no need for additional support. Some poor people will require further assistance, most notably to make the capital investments (in, for instance, home insulation) that will allow them to cut their carbon emissions. This would be the case under any carbon pricing mechanism. Groups at risk will include not only those on low incomes, or suffering in fuel poverty, but also those who are financially excluded and unable to budget successfully even without the additional demands of a carbon allowance. These groups could also be unable to access or understand the financial services that will help them make the most of their allowance. Although the ‘pay as you go’ option could go some way to accommodating the financially excluded, it could also entail a number of difficulties: the opportunity to gain money by managing allowances would be less visible, and there would be a particular risk of disadvantaged households ‘cashing in’ their allowances upon receipt, and then struggling to meet the cost of carbon purchases. It will be essential to provide guidance and support to help bring

67 Ev 57

68 Ev 1

people inside the system and to avoid situations where the personal carbon allowance actually results in greater deprivation.

86. Public acceptance of personal carbon trading will depend on the success of the scheme in engaging and protecting disadvantaged groups. These groups will require reassurance and assistance, both to help them meet the cost of their carbon allowances, and also to make the capital investments or lifestyle changes that will remove them from this category. Assistance should focus on helping households to reduce emissions, rather than rely on providing exemptions. Support programmes should be carefully targeted to provide appropriate assistance to those who genuinely need it, including the financially excluded.

87. The inclusion or otherwise of children under a personal carbon trading scheme presents a similar dilemma. The presence of children in a household will clearly contribute to some increase in carbon emissions, both through household energy use and transport patterns. Any failure to accommodate this additional energy use would disadvantage families (especially those on low incomes) and would have severe implications for the popular acceptance of the scheme. Again, the crucial question is that of *how* parents should be compensated, and this is dependent on a proper assessment of the contribution of children to a household's carbon footprint. The answer, in this case, is far from clear. The Energy Saving Trust told us:

‘We do not have the research to tell you what the marginal energy and carbon impact of having children is. Clearly, there is a positive one. Households with children use more energy and carbon than similar households without children, but we do not know by how much’.⁶⁹

It seems unlikely that the average child would contribute enough to a household's carbon footprint to merit a full adult allowance. If children received a full adult allowance (a notion dismissed by David Fleming as ‘bizarre’⁷⁰) childless households would be doubly disadvantaged: not only would families be receiving extra allowances, which would likely exceed the additional energy use, but the national allowance cap would be divided not between the UK's 49m adults but between 61m adults and children, meaning smaller allowances for all.

88. The alternative would be to offer either financial compensation (essentially as an extension of child benefit) or additional, partial allowances (although this would still lead to a reduced personal allowance, overall). The Environmental Change Institute (ECI) confirmed that early research has favoured the latter option: ‘preliminary research by UKERC, which has included a number of workshops with teenagers, suggests that a partial allowance for children, which is allocated to their parents (as in the case of child benefit), would be the most socially acceptable option.’ However, this conclusion is a tentative one, with ECI insisting that further research is required.

89. Any personal carbon trading scheme must take account of children; to allocate no further allowance for children risks severely punishing family households, especially

69 Q 125

70 Q 159

low-income and single parent families. On the other hand, childless households could be unfairly disadvantaged if full allocations were given to children. Significant further research is required to determine the likely impact of children on their household's carbon footprint. Until this research has been carried out, it is not possible to determine the best method of accommodating children in the scheme.

5 The way forward

Filling the research gaps

90. In both written and oral evidence witnesses returned time and again to the lack of available or reliable research on personal carbon trading and related areas. A number of these have already been highlighted in the course of the report. The road map produced for Defra by the Centre for Sustainable Energy made filling these research gaps a priority for taking the personal carbon trading project forward.⁷¹

91. One of the most striking gaps in the research lies in the extent and accuracy of assessments of current levels of household energy use and transport patterns. Simon Roberts told us that research of this kind was essential to 'get a better picture of who are the winners and losers'.⁷² Dr Fawcett and Professor Ekins made similar calls for further research in this area.⁷³ Without this type of data it is difficult to assess how the fundamental question of personal carbon trading would affect households.

92. Many other areas where further research was required were flagged up by witnesses. Dr Fawcett named research into likely reactions to personal carbon trading as a second priority,⁷⁴ while Dr Eyre called for more research into the likely price of carbon allowances and the consequences of a high or low price.⁷⁵ Simon Roberts drew particular attention to the need to assess the political acceptability and feasibility of personal carbon trading.⁷⁶ Richard Starkey called for further research on a range of issues, to assess the relative costs and benefits of personal carbon trading as compared to other instruments.⁷⁷

93. Witnesses told us repeatedly that existing research data is too sparse to allow meaningful decisions in vital politically-sensitive areas such as public acceptance, distributional impacts, and operational costs. Crucially, a lack of comprehensive profiling data on current energy use and transport patterns is restricting the accuracy of predictions of the effect on personal carbon trading on different groups. These research gaps are preventing not only the development of personal carbon trading as a viable policy, but also its fair comparison against other policy instruments. Without more extensive data, the merits of personal carbon trading cannot be fully assessed.

71 Simon Roberts and Joshua Thumim, Centre for Sustainable Energy, *A Rough Guide to Individual Carbon Trading: The ideas, the issues and the next steps*, November 2006, pp 37–39

72 Q 17

73 Q 199 [Dr Fawcett] and Q 216 [Professor Ekins]

74 Q 199

75 Q 122

76 Q 45

77 Q 100

94. Defra has been undertaking a pre-feasibility work programme with the aim of assessing the value of personal carbon trading. However, the CSE, who have cooperated with Defra on studies into personal carbon trading, were concerned about the ability of Defra to pursue the recommendations set out in their ‘road map’.

We do believe there is interest and willingness in Defra to pursue these recommendations. Moreover, we do not believe there are coherent efforts to pursue them currently in any other organisation or research programme on a timely basis. However, we are concerned that funding restrictions at Defra may undermine genuine effort (at what should be modest cost) to establish a robust and coherent research programme.⁷⁸

In oral evidence, Simon Roberts of the CSE told us bluntly that: ‘there is a slight feeling in Defra that it would be really nice if someone else was doing it already but I do not see that happening’.⁷⁹ This view was supported by Dr Fawcett, who was particularly concerned about the inadequate resources dedicated to the topic, both inside and outside Government.⁸⁰ It is particularly important that Defra’s role is one of coordinating and enabling further research, rather than retreading ground already covered by academics.

95. Shortly before publication of our Report, Defra released the results of their preliminary study into personal carbon trading.⁸¹ We welcome the level of work and analysis that has gone into this study, and we hope that it serves to progress the case for personal carbon trading. We note that Defra’s study agrees with our findings in a number of crucial areas: firstly, that personal carbon trading is fiscally progressive, and secondly, that there are no insurmountable technical barriers to such a scheme. We recognise the extent of the Government’s concern over public resistance to personal carbon trading and the potentially high cost of implementing it. These are undeniably difficult areas. However, we regret that, as a result of this, the Government is indicating that it will wind down its work on personal carbon trading. Public acceptance of personal carbon trading may seem a distant or unlikely prospect to the Government, but without some leadership and co-ordination it is unlikely to move beyond the realm of academic study. Although we commend the Government for its intention to maintain engagement in the academic debate, we urge it to do more. Work needs to be done now if we are to ever reach the point when the concept becomes acceptable to the public and we would like to see the Government leading and shaping debate and co-ordinating activity and research. Without action of this kind it is unlikely that personal carbon trading could become a viable policy in the foreseeable future.

Pilot scheme

96. At first glance, the complexity and sensitivity of personal carbon trading seems to demand a pilot scheme. A pilot scheme could provide valuable evidence about how easily the public would understand and participate in trading and about what variation in

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81 Defra, *Synthesis report on the findings from Defra’s pre-feasibility study into personal carbon trading*, April 2008.

allowances would be needed to achieve the maximum degree of fairness. Furthermore a pilot scheme in a defined geographical area could be operated on a virtual basis with no money changing hands. However, there are a number of restrictions to a pilot scheme's effectiveness. Under a fixed-term, geographically-restricted pilot there might be little incentive to make behavioural changes, especially if there was no guarantee that the pilot would evolve into a nationwide scheme. Without this incentive for long-term investment it would prove difficult to assess the extent of likely behavioural changes that would occur under a full scheme.

97. There are alternatives to a public pilot scheme that do not attract the same risks. Broadly, these fall into two categories: activities which help researchers to assess and improve different aspects of the project, and activities which help acclimatise and prepare the population for the implementation of the full scheme. For example, RSA told us about their plans to undertake a pilot of a carbon credit card, and the development of their voluntary online carbon trading model, CarbonDAQ,⁸² while Dr Fawcett discussed the benefit of using focus groups and small exercises to assess attitudes and responses to personal carbon trading.⁸³ A pilot is not a prerequisite for the implementation of large schemes, however complex the operation or preparations may be. The CSE noted that the Congestion Charge was implemented without a pilot, and instead used simulations and behind the scenes testing to refine the technology and systems. Complex and wide-reaching schemes can be implemented successfully without a pilot phase, provided that there has been significant backroom work, trials and testing in advance. Trials, focusing on separate, limited aspects of the whole project offer an opportunity to assess different components of the scheme without the demands and risks of a full-scale pilot.

98. Personal carbon trading does not lend itself easily to a pilot or comprehensive trial. The conditions required accurately to simulate behaviour and transactions under a full personal carbon trading scheme would be difficult to replicate in a pilot with limited participation. We do not believe that it is feasible to address all aspects of personal carbon trading under a single pilot. An alternative approach involving smaller, separately targeted activities focused on particular aspects of the proposed scheme may be preferable.

99. Personal carbon trading could be essential in helping to reduce our national carbon footprint. Further work is needed before personal carbon trading can be a viable policy option and this must be started urgently, and in earnest. In the meantime there is no barrier to the Government developing and deploying the policies that will not only prepare the ground for personal carbon trading, but which will ensure its effectiveness and acceptance once implemented.

82 Ev 58

83 Q 198

Conclusions and recommendations

Evaluating personal carbon trading as a policy option

1. It is quite clear that if the Government is to stand the slightest chance of meeting its 2050 target it cannot afford to neglect the domestic and personal sector. Reductions in carbon emissions from business and industry will be meaningless unless accompanied by significant and equal reductions from households and individuals. (Paragraph 16)
2. Existing initiatives are unlikely to bring about behavioural change on the scale required, with many individuals choosing to disregard the connection between their own emissions and the larger challenge. We conclude that more radical measures must be introduced if emissions reductions from the individual and household sector are ever to make a meaningful contribution to UK targets. Personal carbon trading might be the kind of measure needed to bring about behavioural change. (Paragraph 19)
3. Personal carbon trading could guarantee a reduction in emissions because it places a ceiling on the carbon available for consumption, rather than seeking solely to reduce demand. (Paragraph 20)
4. We believe that personal carbon trading has the potential to drive greater emissions reductions than green taxation. A carbon allowance could be more effective at incentivising behavioural change and engaging individuals in reducing their emissions than the price signals resulting from green taxation. (Paragraph 29)
5. We acknowledge that personal carbon trading could be complex administratively and more challenging to implement than green taxation and other alternative proposals. However, its potential to change behaviours and engage individuals means the Government should seriously and urgently assess how to take personal carbon trading forward. (Paragraph 31)
6. We acknowledge the many difficulties that will have to be overcome in the development and implementation of personal carbon trading, not least work to bring about the public and political acceptance of such a concept; considerable further research is required on many aspects of personal carbon trading. However, we believe that, by designing and implementing a sensitive and moderate scheme, these obstacles could be overcome. (Paragraph 33)

Towards a practical personal carbon trading scheme

7. We believe that trying to solve all the problems involved in introducing an economy-wide system would unacceptably delay the introduction of a personal carbon trading scheme. The most realistic option is to introduce a scheme with restricted participation. Companies and other aspects of the economy could be covered by different trading schemes, with the consolidation of schemes considered at a later

date once the principle of personal carbon trading had been satisfactorily established. (Paragraph 35)

8. We do not believe that double counting is a serious handicap. However, we recognise that concerns over double counting of carbon emissions do exist and need to be addressed. In the meantime they must not be a barrier to investigating and developing the concept of personal carbon trading. (Paragraph 37)
9. We agree with the Government that the introduction of a personal carbon trading scheme should be a matter for primary legislation, rather than using the delegated powers contained in the Climate Change Bill. (Paragraph 38)
10. We believe that the setting and managing of caps for personal carbon trading would be wholly consistent with the provisions for emissions budgets and targets as set out under the draft Climate Change Bill. (Paragraph 39)
11. We are confident that the technical and operational challenges of implementing personal carbon trading can be overcome. Suitable technology and systems already exist. Although a personal carbon scheme would operate on a larger scale than most existing schemes, the concept has been successfully demonstrated. (Paragraph 45)
12. The private sector could play a vital role in operating a personal carbon trading scheme. Further research and consultation is required in order to determine precisely what the most appropriate role for business would be. (Paragraph 46)
13. We agree with the Centre for Sustainable Energy that it is crucial to shift the debate away from ever-deeper and more detailed consideration of how any personal carbon trading scheme could operate towards the prior questions of how it could be made publicly and politically acceptable. It is these questions that will ultimately decide the viability of personal carbon trading, and until they have been fully analysed and properly answered, further work on the operational details of schemes adds little value to the main debate. (Paragraph 47)
14. Public opinion may be hostile to any policy instrument designed radically to reduce emissions from individuals. The Government must be courageous on this point. Widespread public acceptance, while desirable, should not be a pre-condition for a personal carbon trading scheme; the need to reduce emissions is simply too urgent. However, significant opposition could undermine any proposal. Further research is required in order to obtain a more detailed picture of the extent of public resistance to personal carbon trading and in what ways this opposition could be tackled. (Paragraph 50)
15. Opposition to personal carbon trading could be reduced if the public could be convinced of three things. First, that it is absolutely essential to reduce emissions; second, that this can only be achieved if individuals take personal responsibility for reducing their own emissions; and third, that personal carbon trading is a fairer and more effective way of reducing personal emissions than alternatives such as higher taxes. The public must be persuaded of the first two parts of this argument as soon as possible if the Government is ever to convince them of the third. Persuading the public depends on perceptions of the Government's own commitment to reducing

emissions, and of the priority given to climate change in its own decision making. (Paragraph 52)

16. If a personal carbon trading scheme is ever to see the light of day then the first stages of the scheme, at least, will need to focus on gaining public and political acceptance. Any scheme must limit emissions, but we must accept that initially caps might be more lenient than is ideal, in order to achieve public acceptance. Once the scheme is better established, more demanding caps could be set. This approach will have to be carefully balanced against the need to ensure the scheme effectively reduces emissions in line with national targets. (Paragraph 55)
17. We believe that personal carbon trading could be made workable if it was acknowledged that it may not be possible to cover all eventualities from the very beginning. A basic programme covering certain emissions could be a useful stepping stone to a more comprehensive scheme. We recommend that the Government investigate the possibility of a phased initial implementation, including all individuals, but concentrating on certain basic areas of carbon use, such as household energy. The scheme could then be developed, expanded, and integrated with other schemes over time, as appropriate. (Paragraph 61)
18. Personal carbon trading will pose particular difficulties in accommodating and engaging the financially excluded. It is unrealistic to ask those who find it difficult, or even impossible, to manage their standard finances, to also understand and manage a carbon account. While the possibility of a 'pay as you go' option goes some way to relieving these difficulties, it is imperative that any personal carbon trading scheme includes a detailed and determined strategy for assisting the financially excluded. Research is required to assess the likely proportion of people who would choose this type of option, and whether they would face any significant disadvantage as a result. It would be important to make the scheme sufficiently simple and accessible that remaining involved seemed as easy, or indeed easier, than opting out. (Paragraph 67)
19. Personal carbon trading provides only the incentive to reduce emissions, not the means. It is clear that a personal carbon trading scheme would need to be accompanied (and, indeed, preceded) by a raft of other policies. The Government would need to make sure that the opportunities and resources to help people reduce emissions were readily available and well publicised. (Paragraph 71)
20. We commend Defra's Act on CO₂ calculator. It is accessible, engaging, and simple to use. Under a personal carbon trading scheme it could be adapted to provide further information related to personal carbon allowances, and link to personalised advice on how to save carbon units. (Paragraph 72)
21. We firmly support the introduction of smart metering in households. This would be an essential supporting measure of a personal carbon trading scheme. At any rate, smart metering should be introduced as soon as possible in order to raise carbon consciousness and thereby lay the ground for carbon restricting measures. (Paragraph 72)
22. Personal carbon trading will inevitably highlight existing inequalities of income and opportunity. Any instrument designed to restrict and reduce domestic carbon

emissions would raise the same concerns and it would be wrong to reject the proposal of personal carbon trading because of these difficulties. As with any other policy, these inequalities will need to be identified, assessed and, where appropriate, compensated for. (Paragraph 79)

23. In order to be effective, a personal carbon trading scheme will have to impose a degree of inconvenience and additional cost. The urgency with which we need to address climate change means the Government should not be afraid of this. When accounting for distributional impacts it will be essential to strike a balance between addressing genuine difficulty and allowing the inconvenience that will encourage change to persist. The groups in genuine need of support must be identified. (Paragraph 82)
24. Public acceptance of personal carbon trading will depend on the success of the scheme in engaging and protecting disadvantaged groups. These groups will require reassurance and assistance, both to help them meet the cost of their carbon allowances, and also to make the capital investments or lifestyle changes that will remove them from this category. Assistance should focus on helping households to reduce emissions, rather than rely on providing exemptions. Support programmes should be carefully targeted to provide appropriate assistance to those who genuinely need it, including the financially excluded. (Paragraph 86)
25. Any personal carbon trading scheme must take account of children; to allocate no further allowance for children risks severely punishing family households, especially low-income and single parent families. On the other hand, childless households could be unfairly disadvantaged if full allocations were given to children. Significant further research is required to determine the likely impact of children on their household's carbon footprint. Until this research has been carried out, it is not possible to determine the best method of accommodating children in the scheme. (Paragraph 89)

The way forward

26. Witnesses told us repeatedly that existing research data is too sparse to allow meaningful decisions in vital politically-sensitive areas such as public acceptance, distributional impacts, and operational costs. Crucially, a lack of comprehensive profiling data on current energy use and transport patterns is restricting the accuracy of predictions of the effect on personal carbon trading on different groups. These research gaps are preventing not only the development of personal carbon trading as a viable policy, but also its fair comparison against other policy instruments. Without more extensive data, the merits of personal carbon trading cannot be fully assessed. (Paragraph 93)
27. Shortly before publication of our Report, Defra released the results of their preliminary study into personal carbon trading. We welcome the level of work and analysis that has gone into this study, and we hope that it serves to progress the case for personal carbon trading. We note that Defra's study agrees with our findings in a number of crucial areas: firstly, that personal carbon trading is fiscally progressive, and secondly, that there are no insurmountable technical barriers to such a scheme.

We recognise the extent of the Government's concern over public resistance to personal carbon trading and the potentially high cost of implementing it. These are undeniably difficult areas. However, we regret that, as a result of this, the Government is indicating that it will wind down its work on personal carbon trading. Public acceptance of personal carbon trading may seem a distant or unlikely prospect to the Government, but without some leadership and co-ordination it is unlikely to move beyond the realm of academic study. Although we commend the Government for its intention to maintain engagement in the academic debate, we urge it to do more. Work needs to be done now if we are to ever reach the point when the concept becomes acceptable to the public and we would like to see the Government leading and shaping debate and co-ordinating activity and research. Without action of this kind it is unlikely that personal carbon trading could become a viable policy in the foreseeable future. (Paragraph 95)

28. Personal carbon trading does not lend itself easily to a pilot or comprehensive trial. The conditions required accurately to simulate behaviour and transactions under a full personal carbon trading scheme would be difficult to replicate in a pilot with limited participation. We do not believe that it is feasible to address all aspects of personal carbon trading under a single pilot. An alternative approach involving smaller, separately targeted activities focused on particular aspects of the proposed scheme may be preferable. (Paragraph 98)
29. Personal carbon trading could be essential in helping to reduce our national carbon footprint. Further work is needed before personal carbon trading can be a viable policy option and this must be started urgently, and in earnest. In the meantime there is no barrier to the Government developing and deploying the policies that will not only prepare the ground for personal carbon trading, but which will ensure its effectiveness and acceptance once implemented. (Paragraph 99)

Formal Minutes

Tuesday 13 May 2008

Members present:

Mr Tim Yeo, in the Chair

Mr Martin Caton	Nick Hurd
Colin Challen	Mark Lazarowicz
Mr David Chaytor	Mr Graham Stuart
Mr Ian Liddell-Grainger	Jo Swinson
Mr Martin Horwood	Dr Desmond Turner

The Committee considered this matter.

Draft Report (*Personal Carbon Trading*), proposed by the Chairman, brought up and read.

Motion made, and Question proposed, That the draft Report be read a second time, paragraph by paragraph.—(*The Chairman.*)

Amendment proposed to leave out from ‘That’ to the end of the Question, and add ‘this Committee declines to read the draft report a second time because it unfairly criticises the concept of green taxation and does not adequately address the problems that would be faced by those who already struggle to manage the competing demands of low incomes and high living costs and limited options for changing their lifestyles and circumstances’, instead thereof.—(*Martin Horwood.*)

Question put, That the Amendment be made.

The Committee divided.

Ayes, 1	Noes, 7
Martin Horwood	Mr Martin Caton
	Colin Challen
	Mr David Chaytor
	Mark Lazarowicz
	Mr Ian Liddell-Grainger
	Mr Graham Stuart
	Dr Desmond Turner

Main Question put, and agreed to.

Paragraphs 1 to 99 read and agreed to.

Summary read and agreed to.

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

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

Written evidence was ordered to be reported to the House for printing with the Report.

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

[Adjourned till Tuesday 20 May 2008 at 10.00am]

Witnesses

Tuesday 10 July 2007

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Mr Simon Roberts, Chief Executive and **Mr Joshua Thumin**, Head of Research, The Centre for Sustainable Energy Ev 1

Mr Richard Starkey, Researcher, The Tydall Centre for Climate Change Research Ev 26

Tuesday 17 July 2007

Dr Dick Eyre, Director of Strategy and **Mr Brian Samuel**, Head of Policy Research, The Energy Saving Trust Ev 35

Mr Tim Helweg-Larsen, Project Leader for *zerocarbonbritain* and Director, Public Interest Research Centre, **Mr Paul Allen**, Project Director for *zerocarbonbritain*, and Development Director, Centre for Alternative Technology and **Dr David Fleming**, Director of The Lean Economy Connection Ev 48

Tuesday 24 July 2007

Mr Matt Prescott, Project Director, *RSA Carbon Limited* Ev 56

Dr Tina Fawcett, Senior Researcher, Environmental Change Institute Ev 65

Professor Paul Ekins, Policy Studies Institute Ev 75

List of written evidence

1	Centre for Sustainable Energy	Ev 1
2	Department for Environment, Food and Rural Affairs	Ev 113
3	Dr Mark Roodhouse, Department of History, University of York	Ev 114
4	Dr Tina Fawcett, Environmental Change Institute, University of Oxford and UK Energy Research Centre	Ev 65
5	Energy Saving Trust	Ev 35
6	Laurence Matthews	Ev 99
7	Professor Paul Ekins, Policy Studies Institute	Ev 73
8	Public Interest Research Centre (PIRC), Centre for Alternative Technology (CAT) and The Lean Economy Connection	Ev 45
9	RSA Carbon Limited	Ev 56
10	Steve Sorrell, Senior Fellow, Sussex Energy Group, SPRU, University of Sussex	Ev 84
11	Sustainable Development Commission	Ev 83
12	The Tyndall Centre for Climate Change Research, University of Manchester	Ev 16, 20

List of Reports from the Committee during the current Parliament

The reference number of the Government's response to each Report is printed in brackets after the HC printing number.

Session 2007–08

First Report	Are biofuels sustainable?	HC 76-I & -II (HC 528)
Second Report	Reducing Carbon Emissions from UK Business: The Role of the Climate Change Levy and Agreements	HC 354
Third Report	The 2007 Pre-Budget Report and Comprehensive Spending Review: An environmental analysis	HC 149-I & -II
Fourth Report	Are Biofuels Sustainable? The Government Response	HC 528
Fifth Report	Personal Carbon Trading	HC 565

Session 2006–07

First Report	The UN Millennium Ecosystem Assessment	HC 77 (HC 848)
Second Report	The EU Emissions Trading Scheme: Lessons for the Future	HC 70 (HC 1072)
Third Report	Regulatory Impact Assessments and Policy Appraisal	HC 353 (HC 849)
Fourth Report	Pre-Budget 2006 and the Stern Review	HC 227 (HC 739)
Fifth Report	Trade, Development and Environment: The Role of FCO	HC 289 (HC 1046)
Sixth Report	Voluntary Carbon Offset Market	HC 331 (HC 418)
Seventh Report	Beyond Stern: From the Climate Change Programme Review to the Draft Climate Change Bill	HC 460 (HC 1110)
Eighth Report	Emissions Trading: Government Response to the Committee's Second Report of Session 2006–07 on the EU ETS	HC 1072
Ninth Report	The Structure of Government and the challenge of climate change	HC 740 (HC 276)

Session 2005–06

First Report	Greening Government: the 2004 Sustainable Development in Government Report	HC 698
Second Report	Sustainable Timber	HC 607 (HC 1078)
Third Report	Sustainable Procurement: the Way Forward	HC 740
Fourth Report	Pre-Budget 2005: Tax, economic analysis, and climate change	HC 882 (HC 195)
Fifth Report	Sustainable Housing: A follow-up report	HC 779
Sixth Report	Keeping the lights on: Nuclear, Renewables, and Climate Change	HC 584 (HC 196)
Seventh Report	Sustainable Development Reporting by Government Departments	HC 1322 (HC 1681)
Eighth Report	Proposals for a draft Marine Bill	HC 1323 (HC 1682)
Ninth Report	Reducing Carbon Emissions from Transport	HC 981
Tenth Report	Trade, Development and Environment: The Role of DFID	HC 1014 (HC 197)
Eleventh Report	Outflanked: The World Trade Organisation, International Trade and Sustainable Development	HC 1455 (HC 354)
Twelfth Report	Transport Emissions: Government Response to the Committee's Ninth Report of Session 2005–06 on Reducing Carbon Emissions from Transport	HC 1718
