BUSINESS ACTION ON CLIMATE CHANGE: WHERE NEXT AFTER EMISSIONS TRADING?

WORKING PAPER AND LITERATURE REVIEW

NOVEMBER 2004

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PLEASE NOTE THIS IS AN INTERIM REPORT. SEE THE FINAL PROJECT REPORT FOR FURTHER INFORMATION AND RECOMMENDATIONS.

SECTION 1 – INTRODUCTION AND BACKGROUND

1.1 Background

The 1997 Kyoto Protocol requires industrialised countries to reduce their emissions of six greenhouse gases, of which the most significant by volume is carbon dioxide (CO_2). To respond to this challenge, the EU and its Member States have subsequently developed a raft of policies with the aim of reducing emissions. At the EU level, the European Climate Change Programme has been the focus of the policy process from which a number of measures have emerged. The UK published its Climate Change Programme (CCP) in 2000, which included a number of measures targeted at different sectors of the UK economy. Of these measures, a significant number were put in place to encourage business action on climate. These include:

- Climate Change Levy (CCL): A tax on the industrial use of energy, introduced in 2001.
- Climate Change Agreements: Agreements made by a range of business sectors to enable them to obtain an 80% rebate from the CCL.
- Advice on low-carbon technologies and energy efficiency, through the Carbon Trust[1].
- Renewables Obligation: This requires electricity suppliers to source 10% of electricity from renewable sources.
- UK Emissions Trading Scheme: A voluntary initiative for businesses to trade carbon permits in order to incentivise carbon saving.

The reaction to these instruments amongst stakeholders has been mixed. Most have been welcomed to some extent, while many have been criticised for their complexity, and lack of clear signals[2]. Until 2004, these instruments effectively provided the UK policy framework for business action on climate change. However, on 1 January 2005, that will change substantially, as the EU Emissions Trading Scheme (ETS) comes into operation.

The Directive establishing the EU ETS was agreed in 2003 and transposed into UK legislation by the end of that year. In addition, each Member State has to draft a National Allocation Plan (NAP), which sets out the level of emissions that the relevant industries will be allowed to emit in the course of the first phase of the scheme. The UK drafted its NAP in early 2004 and had submitted it to the European Commission, which had subsequently provisionally accepted it subject to minor amendments. This was the state of play when the research underlying this report was undertaken. In October 2004, however, the UK announced its intention to revise further its NAP, which occurred while this report was being finalised.

The other policy development of note since the publication of the UK CCP is the UK Energy White Paper (EWP), which was published in March 2003. This established the need to tackle climate change as one of the central aims of energy policy and set out an ambition for the UK to reduce its emission of CO_2 by 60% over the next fifty

[1] www.thecarbontrust.co.uk
[2] See discussion of Section 2.2 for details of relevant literature

years. The two main routes to CO_2 reduction foreseen are an increase in the use of renewable energy, and a step-change in energy efficiency. These targets are certainly ambitious. They will not be reached without sustained action by business and consumers, which in turn will require support and encouragement from government, through measures such as legislation, public spending and economic instruments.

1.2 The Research

Given the advent of the EU emission s trading scheme, IEEP and Green Alliance decided that it was timely to undertake research to investigate the possible implications of the scheme on existing UK climate change policy. Informal discussions with stakeholders confirmed that this was indeed a piece of research that it would be useful to undertake. In addition, the UK Climate Change Programme is about to be reviewed and, therefore, the research could contribute to this review. While the Energy White Paper clearly provides a longer-term context for the work, it was decided to keep the work more focused on the short-term, and the synergies between current policy instruments, in particular.

The aims of this project were:

- To review the incentives in place to encourage businesses action on climate change, following implementation of the EU emissions trading scheme, through a survey of senior energy stakeholders in government, business and the voluntary sector.
- To make recommendations for simplifying and strengthening the policy framework for business action on climate change.

It was decided to keep the focus of the research on policy measures in place in the UK to incentivise business to respond positively to the challenge of climate change. While other sectors clearly also have a role to play in reducing greenhouse gas emissions, the EU ETS covers only selected industrial activities. Hence other sectors were only addressed by the research in the context of identifying gaps in existing climate change policies and the way forward, where these were raised as issues. It was intended, therefore, that the final report should focus more on the short- to medium-term policy changes that are needed to adjust ensure that UK policy is consistent with the demands of the EU ETS, rather than identifying long-term policy recommendations.

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1.3 The Methodology

As mentioned above, the aim of the study was to identify the implications of the advent of the EU ETS on existing UK climate change policy measures targeted at business. Hence, it was decided that the best approach would be to seek the views of those with first hand knowledge of the relevant policy measures. It was decided to undertake structured interviews, based on a questionnaire, with 25 key stakeholders representing various stakeholder groups. A Steering Committee consisting of the

funders and other selected stakeholders, was set up to provide advice at various key stages of the project[3].

Before the interviews began, a literature review was undertaken of the key reports of importance to this study. A list of key documents was drawn up as a result of an initial brainstorm and the completeness of the list was confirmed by the Steering Committee. A potential list of interviewees was drawn up on the basis of consultation with the funders and the Steering Committee, which represented the key stakeholder groups of government, industry, NGOs and independent experts/policy watchers. A representative sample of the full list was approached for interview. A breakdown of the stakeholder groups to which the interviewees belonged is given in the table, below.

Stakeholder group	***Number of interviewees***
Government	6
Industry	8
NGOs	5
Independent experts/policy watchers	6
Total	**25**

The content and format of the questionnaire was also guided by the Steering Committee. A draft set of questions was discussed with the Steering Committee, before being finalised. The interviews were held over the summer of 2004, i.e. while the UK was finalising its NAP and before the announcement of the additional revision in October 2004.

Once the interviews had been undertaken and their contents verified with the respective interviewee, a matrix of responses to the various questions was drawn up, with the various responses categorised according to the stakeholder group to which the interviewee belonged. This was used as the basis of the analysis.

The conclusions and findings of the report are not based solely on the analysis of the interviews, rather they have been developed by the researchers, in consultation with the Steering Committee, on the basis of this analysis and the review of the literature. Initial findings were presented to the Steering Committee in early October 2004, while a draft interim report was presented to the Steering Committee for comments later in the same month. This interim report is the result of that process.

The final stage of the research is a seminar, which will take place on 17 November 2004, at which this interim report will be presented and its findings discussed. The participants invited will consist of those interviewed for the research and other selected stakeholders. The discussion that takes place will be used to develop the interim report into a final report of the project. The final report will be published early in 2005.

[3] The Steering Committee consisted of representatives of the funders and individuals from other relevant organisations, including Friends of the Earth, Business Council for Sustainable Energy and the Advisory Committee on Business and the Environment.

SECTION 2 - EXISTING UK CLIMATE CHANGE POLICY

2.1 Overview of UK Climate Change Policy

In order to fully appreciate the potential implications of the EU Emissions Trading Scheme on UK climate change policy, it is first necessary to understand and gauge opinions on the existing policy framework. This is particularly important given the objective of the study to feed into the debate on the review of the UK Climate Change Programme (CCP).

The Climate Change Programme (2000) set out the UK's contribution to the global response to climate change. The programme contains a number of policies and measures to:

- Improve business' use of energy, stimulate investment and cut costs;
- Stimulate new, more efficient sources of power generation;
- Cut emissions from the transport sector;
- Promote better energy efficiency in the domestic sector;
- Improve the energy efficiency requirements of the Buildings Regulations;
- Continue cutting emissions from agriculture; and
- Ensure the public sector takes a leading role.

Those measures of relevance to industry, and therefore that are included within the scope of this study, are set out, underneath the specific objectives, in Table 2.1 together with details of the measure, to whom it applies and the timescale. Table 2.2 sets out the potential carbon savings expected from these measures. In the CCP, the government stressed the vital importance of business support to the success of the Programme, highlighting that, in addition to addressing its own CO_2 emissions, business was best placed to develop and bring the new technologies to the market that will be needed to reduce emissions in the longer term.

The CCP set a domestic goal of cutting emissions of CO_2 by 20% below 1990 levels by 2010. It also set out the expectation that the UK would go beyond this after 2010. In June 2000 the Royal Commission on Environmental Pollution (RCEP) recommended that a domestic target of a 60% reduction by 2050 be established, and this was done in the Energy White Paper published in 2003. The Energy White Paper also set out objectives regarding the security of supply, addressing fuel poverty, and promoting competitive energy markets. In April 2004, the government published *'Energy Efficiency – The Government's Plan for Action'*, setting out how it aims to deliver the step change in the rate of energy efficiency improvements needed to meet the 2050 target. The plan includes, *inter alia*, doubling the level of Energy Efficiency Commitment (EEC) activity from 2005; a tax allowance to encourage private sector landlords to invest in properties; new energy services pilots; and a stronger emphasis on communicating about climate change.

Table 2.1 Measures in the UK Climate Change Programme Focused on Industry

Measure	Brief details	Sectors affected and exemptions	Timescale
UK CCP	The UK Climate Change Programme (CCP) was published in November 2000. It was focused on policies and measures to meet the Kyoto target and move towards the domestic goal of reducing CO_2 emissions to 20% below 1990 levels by 2010. It included a commitment to review the programme in 2004.	A package of measures and policies aimed at improving business use of energy, stimulating investment and reducing costs; stimulating more efficiency sources of power generation; cutting emissions from the transport sector; promoting energy efficiency in the domestic sector; improving the energy efficiency requirements of the Buildings Regulations; cutting emissions from agriculture; and ensuring the public sector takes a leading role.	Consultation to be launched in Autumn 2004. Revised CCP to be published first half of 2005.
Objective: Improving business use of energy, stimulating investment and cutting costs			
Climate Change Levy (CCL)	A tax on business and public sector energy use, introduced in April 2001. The tax applies to electricity, gas, LPG and solid fuels, and appears on energy bills. The amount of levy is based on the quantity of fuel supplied. There are separate rates for each type of fuel: • electricity - 0.43 pence per kilowatt hour; • natural gas - 0.15 pence per kilowatt hour; • solid fuel e.g. coal and coke - 1.17 pence per kg; and • liquid petroleum gas *for heating* - 0.96 pence per kg. Revenue raised is being recycled to business through a 0.3% reduction in employers' National Insurance Contributions, and additional Government support for energy efficiency measures, including Action Energy, ECAs and the EEF (see below). There is no net gain to public finances, i.e. revenue neutral.	**Status:** Mandatory **Applies to**: All business energy use. **Exemptions:** Those with a lower rate of 5% VAT e.g. domestic users and some businesses; good quality CHP; renewables (except large scale hydro of more than 10MW); supplies used in some forms of transport; 80% reduction for companies meeting CCA commitments; a half-rate applies to eligible horticultural producers.	2001 onwards. Expected to be evaluated in the CCP review.
Climate Change Agreements (CCA)	Part of the CCL package, the CCAs are negotiated agreements between government and energy intensive sectors covered by IPPC. These industries receive an 80% discount on the levy in return for meeting targets on energy efficiency and carbon	**Status:** Negotiated agreements **Applies to:** Energy intensive sectors, defined as one which carries out activities which are listed under Part A1 or A2 headings in Part 1 of Schedule 1 to the	Agreements to 2012. Expected to be evaluated in the CCP review.

Measure	Brief details	Sectors affected and exemptions	Timescale
	emissions. Nearly 6000 companies in 46 industrial sectors participate in the CCAs. The targets work at two levels: companies in the same sector, through an industry association, commit to an overall target; and individual companies have their own targets. If the sector target is achieved, all companies in the sector receive the rebate irrespective of individual performance. Companies also receive the rebate if they achieve their individual target, even if the sector is breached. Companies that exceed individual targets can convert the excess into emissions allowances which they can sell in the emissions trading market (UKETS), once verified. CCA companies can meet targets by taking individual actions to reduce emission, or by trading with other CCA companies or through the UKETS, where they are referred to as 'agreement participants'.	Pollution Prevention and Control (England and Wales) Regulations 2000 (SI 2000 No.1973), as amended by the Pollution Prevention and Control (England and Wales) (Amendment) Regulations 2001 (SI 2001 No. 503). This criterion applies throughout the UK. Sites operating Part A PPC activities will be subject to a legal requirement to use energy efficiency - other sites are not subject to this requirement. Small sites which fall below PPC size thresholds (with the exception of thresholds relating to combustion plant), but which would otherwise be covered by the regulations, will also be eligible for the relevant sector agreement. The regulations cover the main energy intensive sectors of industry, and in agriculture, livestock units for the intensive rearing of pigs and poultry. There are ten major energy intensive sectors (aluminium, cement, ceramics, chemicals, food & drink, foundries, glass, non-ferrous metals, paper, and steel) and over thirty smaller sectors. Agreements have been negotiated with the relevant sector trade associations on behalf of the companies within the sectors concerned.	
Carbon Trust	The Carbon Trust is an independent company funded by recycled revenue from the CCL. Its role is to help the UK move to a low carbon economy by helping business and the public sector reduce carbon emissions now and capture the commercial opportunities of low carbon technologies. It delivers best practice programmes to inform and influence behaviour and to build skills and resources; and informs policy makers in the low carbon debate. Its objectives are: to ensure that UK business and public sector meet ongoing targets for CO_2 emissions; to improve the competitiveness of UK business through resources efficiency; and to support the development of a UK industry sector that capitalises on the innovation and commercial value of low carbon	**Status:** Voluntary **Applies to:** Business and public sector	Ongoing since 2001

Measure	Brief details	Sectors affected and exemptions	Timescale
	technologies. The Carbon Trust delivers **ActionEnergy** (former Energy Efficiency Best Practice Programme), which provides free information and advice; and administers the **Enhanced Capital Allowance (ECA)** scheme, which offsets tax on investments in energy-saving technologies on an approved list; and the **Energy Efficiency Fund (EEF)** providing energy efficiency advice and audits to businesses, and stimulating research, development and take up of renewable sources of energy and other low carbon technologies.		
UK Emissions Trading Scheme (UKETS)	A voluntary initiative for businesses to trade carbon permits. Its aims are to contribute 3.96mt in CO_2 reductions by 2006; help UK firms learn about emissions trading and prepare for international trading; and establish the City of London and the UK as an international centre for emissions trading. It is a 'cap and trade' scheme, which set an overall emissions reduction target which was distributed between participants. Companies, known as 'direct participants', bid for emissions reductions for the period 2002-06 in return for a share of £215m funding from Defra in March 2002. Participants can either reduce their own emissions or buy emissions allowances. Trading was launched in April 2002. There were 34 direct participants when the scheme began, though this has since fallen to 31. The market for emissions allowances since the scheme began has been variable in terms of quantities traded and the prices obtained. The price for allowances peaked at £12.50/tonne in Sept/Oct 2002, but has on average been around £2.50/tonne. At no time has it met the price set at auction of £17.79/tonne.	**Status:** Voluntary **Applies to:** 31 'direct participants' (funding for taking on allowances); also open to the 6000 CCA organisations (known as 'agreement participants' and trading participants (who can trade but are not direct or agreement participants). Participation in the Scheme via the direct entry route is open to any individual or organisation on the basis of the greenhouse gases it emits. The Government's priority is to safeguard the environmental integrity of the Scheme. Therefore, it is not obliged to allow anyone to enter into the Scheme and it has the discretion to refuse prospective participants direct entry. Prospective participants are required to demonstrate to the satisfaction of the Government that they intend to, and are capable of, complying with the rules of the Scheme. **Exemptions:** There are certain sources that a Direct Participant cannot enter into the Scheme: i) Direct emissions from electricity or heat generation *except* where the electricity and heat is both generated and used on-site; ii) Emissions from facilities within a target unit covered by a CCA; iii) Emissions from land and water transport;	2002-2006. Uncertainty over whether there will be a 2nd period. A review of the first years of the scheme was completed by the National Audit Office; and a review of the first two years by NERA.

Measure	Brief details	Sectors affected and exemptions	Timescale
		iv) methane emissions from landfill sites covered by the Landfill Directive; v) Emissions from households.	
Integrated Pollution Prevention and Control (IPPC)	Implementation of the EU IPPC Directive will provide a regulatory basis for reducing emissions of methane, nitrous oxide, hydrofluorocarbons and perfluorocarbons, as well as improving energy efficiency of most of the energy intensive sectors of industry. Requirements will apply to industrial sites that account for around 60% of the energy use of the manufacturing industry, as well as energy supply industries.	**Status:** Mandatory **Applies to:** Installations of a number of industrial sectors, including energy, the production and processing of materials, minerals, chemicals, waste management, food production, paper and pulp production and some intensive farming.	All relevant sectors to be covered by 2007.
Objective: Stimulating new, more efficient sources of power generation			
Renewables Obligation (RO)	Introduced in April 2002, it requires all licensed electricity suppliers in England and Wales to supply a specified proportion of their sales from renewable sources. Suppliers demonstrate compliance through a system of Renewable Obligation Certificates (ROCs). The aim is to increase the proportion of electricity provided by renewable sources to 10.4% by 2010/11 (subject to the cost to consumers being acceptable).	**Status:** Mandatory **Applies to:** All licensed electricity suppliers in England and Wales	In place until 2027. Yearly targets have been set up to the 2010/11 period.
See section 3.1 for details of the EU Emissions Trading Scheme			

* Other measures under this objective outside the scope of this study: the Energy Efficiency Commitment, Buildings Regulations, New Home Energy Efficiency Scheme in England and similar schemes in Wales and Northern Ireland; and Affordable Warmth Programme; and Promotion of community heating.

NB. In addition there are a number of product related measures aimed at stimulating the market for energy efficient products and raising consumer awareness. This includes energy labels, standards and others designed to deliver market transformation in the energy efficiency of lighting appliances and other key traded goods. The CCP also includes objectives focused on transport, agriculture and the public sector, which are outside the scope of this study. For full details of the Climate Change Programme see www.defra.gov.uk

Table 2.2 Projected Carbon Savings from the CCP business measures

Measure	**Carbon Savings (MtC)**
Climate change levy, including exemption for CHP and renewables.	2
Climate change agreements with energy intensive sectors and implementation of IPPC	2.5
Energy efficiency measures under the CCL package and the Carbon Trust	0.5
Voluntary reductions targets through the first stage of the UKETS	At least 2
Reform of the Buildings Regulations in England and Wales	1.3 from both business and domestic sectors.

Source: UK CCP, 2000

2.2 Review of the Relevant Literature

Much has been written and stated in relation to UK climate change policy, focussing both at the individual instrument level, and looking at the CCP package as a whole, and suggesting ways of taking policy forward.

2.2.1 Policy instruments and the Overall Policy Mix

There have been a number of studies looking at the individual instruments and the policy package as a whole, although much of what is known is derived from the rhetoric of organisations affected by policy or working in a policy research or lobbying capacity, for example speeches and presentations by stakeholders such as the CBI, WWF, Green Alliance and the PSI.

At an individual level, studies have assessed the performance of specific instruments, and sought to recommend how policies and measures can be improved to ensure that they deliver or, in cases, reduce side effects such as detrimental impacts on certain energy users. In 2002, the Green Alliance, Policy Studies Institute and IEEP carried out research which explored views from the business community on energy taxation and experience with the Climate Change Levy, one year after its introduction[4]. The levy was criticised for applying to energy rather than carbon; the National Insurance rebate link was either not understood, or understood in theory but not believed to be applicable in practice or seen as an effective means of using the revenue to meet sustainable development objectives; and for being a blunt instrument, i.e. not incentivising behavioural change. However, it was considered to have a good awareness-raising role, including the 'announcement effect' of having a tax on energy use and the signal that this sent to energy users. It was considered amongst the businesses surveyed as having raised the issue of energy use higher up the business agenda. Research for the Tyndall Centre for Climate Change Research supports this point. It presented empirical evidence showing that the announcement and following

[4] Ekins, P, Monkhouse, C, Skinner I and Willis, R (2002*) Next Steps for Energy Taxation: A Survey of business views*, Green Alliance

implementation of the CCL caused a permanent reduction of energy demand in the commercial and other final users sector, due to the announcement effect alone. It concluded that 'the announcement of the CCL did not just bring forward an adjustment to new relative prices arising from the CCL but it permanently reduced energy demand to a much greater extent that would be expected from the estimated price responses on their own.[5]'

Climate Change Agreements were viewed as vital by the companies covered by them, given the 80% reduction in CCL received in turn for meeting emission reduction targets. However, they were criticised for the level of bureaucracy involved, and for those outside of the agreements, it was considered unfair that the CCAs weren't more widely applicable.

At the time of the research, the UKETS had only just been launched, and so experience with the scheme was limited. However, even then there was concern about the compatibility of the scheme with the proposed EU scheme. Since then, there have been a number of reviews of the UKETS. For example, the National Audit Office[6] carried out an analysis of the scheme after one year of operation. Its report, released in April 2004, described the scheme as a 'pioneering initiative' that contributed to reducing greenhouse gas emissions and benefited the UK economy. In the scheme's first year, the 31 direct participants reported total emissions reductions almost six times their total target for the year: 4.64mt compared to a target on 0.79mt, thus raising vital questions about over-allocation to direct participants. In assessing the reductions made by the four participants who exceeded the target by the greatest margin (and who together accounted for 80% of the reductions reported in 2002), it showed that a third of the reductions would have happened even without the ETS. Although this was not the case for all participants, as some missed their targets, it is significant given that they accounted for 50% of the incentive funding paid. Many commentators have criticised the undemanding nature of the targets set under the scheme, and questioned the additionality of trading to overall emissions reductions.

On a more positive note, however, the NAO research reported the success of the UKETS in terms of the learning benefits for those taking part and their improved data collection on energy use. Participants agreed that the scheme had improved their understanding of the benefits that emissions trading could bring to them, and that the scheme was effective in securing commitment at a higher level for projects to reduce emissions.

In terms of the market, the price for carbon at no point reached the price set at auction of £17.79/tonne. The price of allowances peaked at around £12.50/tonne in September/October 2002 due to demand from 'agreement participants' for allowances to meet their compliance period targets, but in general have been around £2.50/tonne or less. Brokers participating in the scheme have therefore done so as a 'long-term bet' rather than an immediate commercial opportunity. Indeed, the experience gained by the supporting financial sector - verifiers, brokers etc – and the establishment of

[5] Agnalucci, P, Barker, T and Ekins P (June 2004) Hysterisis and energy demand: the Announcement Effects and the effects of the UK Climate Change Levy, Tyndall Working Paper 51, Tyndall Centre for Climate Change Research.

[6] National Audit Office (2004) The UK Emissions Trading Scheme - A New Way to Combat Climate Change, Report by the Comptroller and the Auditor General HC 517 Session 2003-2004: 21 April 2004

the City of London and the UK as a trading centre, has been a success of the UK scheme. In terms of the interaction of the UK and EU trading schemes, the report stated that 'differences between the UK and European schemes will make integration, for those participants affected and for providers of emissions trading services…less straightforward than initially hoped'. This issue is explored further in section 4.2.

The range of measures and policies that form the overall policy package have often been criticised for their complexity and lack of clear signals. Research has highlighted the need for a clearer and more consistent framework for climate change and energy policy, rather than the 'confusing web of policies' currently in place[7].

2.2.2 Cost effectiveness of the UK CCP

From an economic perspective, attention is given to whether the individual measures deliver carbon savings in a cost effective way, eg. the cost per tonne of carbon. However, this is by no means straightforward. A study by Wordsworth and Grubb[8] highlighted that assessing cost-effectiveness is complicated by the lack of any common objective framework against which the various schemes can be assessed, and that this is compounded by a number of issues. For example, policy measures often have multiple objectives, e.g. the renewables obligation addresses both climate change and security of supply objectives. This makes it difficult to assess their performance based on any one consideration. In addition, it is often difficult to single out any change in, for example business behaviour or energy consumption, based on one measure, in a policy environment where there are so many different drivers. The study also discussed the issue of who it is that pays. For example, with measures like the renewables obligation or energy efficiency commitment, there is almost zero cost to the public sector, with consumers paying indirectly through higher energy bills. This means that the consumer is paying for the carbon damage associated with their consumption, and for investment in commercialising technologies to reduce that damage. They point out that in some cases it is not easy to identify who is paying, and greater transparency is required in identifying the relative cost burden on consumers (directly or via business) and taxpayers. Their preliminary assessments suggest that 'most (though not all) the energy-efficiency programmes are cost-effective in their own right, whilst most supply-side measures are predicated upon the promise of innovation leading to cost reductions. Diverse costs per tonne of carbon saved suggest possible inefficiencies, but this is contingent upon the view taken of innovation economics, and the diversity of policy objectives sought'. They also comment on the different time scales of measures and the need to allow them to mature. For some, it will be several years before we know how effective the various instruments prove to be.

Work carried out for Defra in 2003 concluded that in many cases ex-ante estimates of the costs if measures in the CCP were incomplete, and that this would impact upon

[7] Ekins, P, Monkhouse, C, Skinner, I and Willis, R (2002) Next Steps for Energy Taxation – A survey of business views, Green Alliance, PSI and IEEP.
[8] Wordsworth, A, Grubb, M (2002) *Quantifying the UK's incentives for low carbon investment*, Climate Policy 111 (2002) 1–11, Elsevier Science

the feasibility of analysing cost effectiveness in the CCP review. Furthermore, a number of factors have impacted on business-as-usual emissions profiles, such as higher than expected GDP growth, since the ex-ante analyses of anticipated carbon savings were conducted. It is also clear from the study that in some cases, ex post data for monitoring the impact of individual policies may not be available.

2.2.3 The UK CCP – Is it delivering policy objectives?

The House of Lords Science and Technology Committee has warned that the UK is in serious danger of missing climate change targets due to 'inadequate government leadership and policies', and an over reliance on the market to determine future investment in energy[9]. A report from the House of Commons Environmental Audit Committee[10] has also stated that the policy instruments in place 'have yet to make a significant impact on the UK carbon emissions trajectory', and raised doubts over whether they have the potential to deliver future goals. The Committee considered that there was no evidence that there had been the step-changes needed on energy efficiency, and that the Renewables Obligation will not provide sufficient stimulus to technologies other than wind power. Without other sources there is 'little chance that the renewables target can be achieved by 2010'. It also commented on some specific aspects of existing UK policy addressing business use of energy, raising a number of concerns including: the extent to which energy savings from ECAs would have resulted anyway as a result of, amongst other things, IPPC; the robustness of data used to establish and monitor performance of CCAs, and scepticism about the figures quoted for emissions savings from the CCAs; and transparency of reporting.

Overall, it viewed that the strategy for addressing climate change is 'seriously off course' and called for a more 'imaginative and radical strategy' which might involve the use of fiscal instruments, in particular for transport and domestic energy efficiency.

2.2.4 Where next?

Many studies have put forward suggestions for improving individual instruments or the package as a whole, for example methods of sending clearer signals to energy users regarding the negative externalities of climate change, or addressing gaps and overlaps present. One specific suggestion put forward in a study comparing the overall UK CCP to policy in Germany[11] was the need for the integration of climate change considerations into other areas of policy. It considered that both countries had good frameworks in place and that they are leading the EU on climate change policy. The need for the integration of environmental considerations into sectoral policy is reinforced at the EU level through the Cardiff process, which requires all formations of the EU Council of Ministers, for example transport, industry, etc to demonstrate the consideration of the environment in its policy making. Applying this rationale at the domestic level was seen as the next step for the UK and Germany.

[9] Taylor, A (2004) *Peers fear for climate change targets*, Financial Times, July 15 2004.
[10] House of Commons Environmental Audit Committee (11 August 2004) Budget 2004 and Energy: Tenth Report of the Session 2003-04, HMSO.
[11] Beuermann, C (Sept 2002) Climate Policy: Towards an Agenda for Policy Learning Between Britain and Germany, Anglo German Foundation for the Study of Industrial Society.

The House of Commons Environmental Audit report highlighted that the 'crucially important' series of reviews taking place in 2004/5 provide an opportunity for a fresh look at the scale of the challenges faced and the adequacy of policies in place to meet them. Others, too, are seeing the forthcoming review of the CCP as the opportunity to take stock of where we are now in terms of meeting our international and domestic targets, and critically, assessing how existing policy is performing and identifying what changes may need to be made to ensure that there is a step change move towards a low carbon economy. As Wordsworth and Grubb had concluded in their 2002 study, 'In a few years time there will be a need to revisit the UK programme. Whether the UK is able to reap full benefits from its 'great experiment' may depend upon whether it is able to extend the instruments that work well, and abandon or reform those that don't'.

2.3 Research Findings

The research findings relating to the existing set of UK instruments focus on the following areas:

- Policy framework;
- The individual instruments;
- Whether the existing instruments work well as a package;
- Gaps and overlaps in the existing policy framework; and
- Communication.

2.3.1 Policy Framework

Of those who expressed an explicit view, there was virtual unanimity that the UK would meet its Kyoto target, so in this respect, some argued that little action was needed in the short-term. Others, however, argued that the short-term target that mattered was the UK's domestic target to reduce CO_2 emissions by 20% and that it was not clear whether this was on course to be met; although some thought that even this would be met. Some of the interviewees who thought that the targets would be met still believed that there was a need for short-term action. The rationale for this view was that it was simply important to take early action on climate change rather than focus on meeting targets, one of which was not likely to be particularly challenging. Action in this respect included a greater focus on enabling renewable energy capacity to increase significantly by the Kyoto commitment period, including reducing the various barriers to this, and the need to promote energy efficiency.

In the longer-term, i.e. to meet the objective of the Energy White Paper (EWP) to reduce emissions by 60% by 2050, the general view was that there was a need to build on the short-term policies. Many interviewees also mentioned the need to identify and promote the uptake of low carbon technologies in various sectors, including transport and in the fuel supply more generally.

Of those interviewees who explicitly referred to the EWP target, there was a broad consensus that such a commitment was welcome, but many felt that it was far from clear how this target would be met and, indeed, if it was possible. More broadly, the need to actively engage the Russian Federation, China, India and the US in a longer-term international framework to address climate change was mentioned by several

(see Section 4.2.1). Some interviewees also underlined that policies were needed to address emissions from other sections in the UK (see Section 2.3.4) and that it was important to have an open, transparent debate on how the proposed 2050 target could be met. Two interviewees commented that the targets, themselves, notably the fact that there are two, can be a distraction and that there was a need for the government to clarify the role of the domestic target, in particular.

2.3.2 The instruments that focus in business

As has been outlined in Section 2.1 there is a range of policy instruments active at the UK level aimed at delivering domestic and international targets on climate change. On the whole there was a broad understanding of the main measures by all interviewees, although as can be expected most people had in-depth knowledge of a more select list of instruments reflecting where their work was focused. There was most familiarity with the Renewables Obligation, the Climate Change Levy, Climate Change Agreements and the UK Emissions Trading Scheme (and also the EU Emissions Trading scheme). Interviewees were asked their views on the strengths and weaknesses of each of these, and the responses to this can be seen in Table 2.2.

When asked about the effectiveness of the individual policy instruments, the majority of interviewees considered that, though none was perfect, the Climate Change Agreements and Renewable Obligation (RO) were the most effective measures of the package in terms of delivering climate change objectives. The reasons given for the success of the RO included the fact that it sets clear targets; is relatively long term in focus therefore providing investor confidence; and has been successful in stimulating investment in renewable energy. On the downside, it was commented that it impacts on certain technologies, such as wind farms, rather than encouraging the development of all renewable technology or stimulating development where there has been less progress to date, such as in photovoltaics. It was felt that there is a need to encourage emerging technologies, for example through the use of capital grants or by doubling the Renewable Obligation Certificates (ROCs) received for certain investments.

The majority of interviewees considered the CCAs to be a good, effective policy instrument, given that they have delivered greater reductions in emissions than the targets set out in the negotiated agreements. The 80% reduction in the CCL was considered to be an indisputable incentive for those businesses covered by the CCAs, and has helped to raise the issue of energy higher up the business agenda. The agreements also created ownership of energy issues in those businesses which entered into them; allowed businesses the flexibility of policy responses (trading possibility); and, at a practical level, facilitated dialogue between industry and government. Despite being hailed as one of the most effective measures, a number of limitations were highlighted. The main criticism was the fact that they were only applicable to certain industries, mainly the high energy-users. It was suggested that the targets set were not as strict as they could have been, and there were questions to whether the reductions achieved were beyond what would have happened under a business as usual scenario. The administrative aspects were criticised as being overly complex, bureaucratic and not transparent, including the fact that SMEs found it difficult to participate. Furthermore, its links with the UKETS and the EU ETS added further complexity.

The Climate Change Levy and the UK Emissions Trading Scheme were considered to be the least effective policy instruments in terms of the emissions reductions they achieved. However, regarding the latter this was more in terms of the additionality of the scheme, i.e. the extent to which it had resulted in emissions reductions beyond what would have been achieved without the scheme. Some commented on the high cost of delivering these reductions and whether as an emissions reduction instrument it was cost effective, given that evidence suggests that the targets were weak. Despite questions over additionality and cost-effectiveness, however, the achievements of the scheme in meeting its other, and some would argue equally important, objectives of preparing businesses for trading and establishing the UK infrastructure was recognised. The benefits of establishing London as a centre, the development of verifiers, auditors, etc, and the business 'hands on' experience of trading were considered as outweighing the weaknesses of the scheme. However, several interviewees noted that there is a limit to the extent that 'direct' experience was gained due to differences between the UK and EU schemes (see Section 4.1).

Regarding the CCL, although it was perceived as one of the least effective instruments (when viewing it in isolation from the CCAs) in terms of the emissions reductions that it achieved, overall views were quite mixed. Most stakeholders could see that there are advantages and disadvantages, rather than being an advocate or an opponent of the instrument. Most thought that it was positive in the sense that it raised awareness of energy use and climate change (including through its name), and encouraged action on energy efficiency. However, there was a wide consensus that because of the falling cost of energy at the time that the levy was introduced, the effects of the levy were negated. It is considered that the price of energy and the level of the levy are too low to have a significant impact on business behaviour. The main way that the levy was perceived to influence behavioural change was through the linked CCAs and the fact that exemptions from the levy were available to those who entered into the negotiated agreements. For non energy-intensive users, the incentive to reduce energy use and emissions was less, given the inelasticity of energy demand and the low level of the levy. Another common criticism was the fact that it is based on energy and not carbon. Furthermore, some questioned whether the levy should continue once emissions trading has commenced. For those affected by the EU ETS it is perceived that it would be double-regulation.

Interviewees supported the range of energy efficiency measures in place, considering them to be essential support mechanisms for removing obstacles and delivering the objectives of the other policy instruments. However, there was scepticism from some about whether they were actually delivering 'real improvements', and even whether they had 'penetrated the consciousness' of businesses. Predicting into the future, it was commented by some interviewees that in time the EU ETS would become *the* most effective instrument at work in the UK.

Table 2.2 – Strengths and Weaknesses of selected UK Climate Change Instruments
(Most commonly cited responses in bold)

Climate Change Levy (CCL)	**Climate Change Agreements (CCAs)**
Strengths • **Financial incentive to make changes by raising price of energy.** • **Awareness raising** - Sends signal of government's intention just by announcing it and having it. • **Puts energy on the agenda of businesses**. • Mandatory. • Tax easier to administrate to a wider range of businesses. • Lever to get companies into the CCA. • Goes across business and the public sector.	*Strengths* • **Effective in reducing emissions (up to the targets).** • **Awareness raising.** • **Set targets.** • Negotiation process/dialogue brought attention to issue and made industry think about what was possible. • Required companies to monitor and report emissions systematically. • Financial incentive. • Offers business the option of CCA or paying levy.
Weaknesses • **Taxing energy use not carbon.** • **Level of the levy is weak versus the underlying price movements of energy** Has been frozen for 3 years so the incentive is lower than when it started. • **Strong signal to energy intensive industry but energy inelastic as it is such a small component of costs for non-energy intensive industries. Therefore less effect in non energy-intensive.** • Blunt instrument. • Exclusion of energy intensive industry who are in CCAs, therefore some sectors are negatively affected as they have to deal with CCL but aren't eligible for the CCA. • Little evidence that it changes business use of energy, especially in the sectors it is targeting, as these tend to be non energy-intensive. • Lack of clarity over main aim of the measure. • Does not distinguish between the different sources of energy (apart from the exemption for biofuels).	*Weaknesses* • **Overlap with UKETS and relationship with EU ETS** • **Targets not ambitious enough** so easy to achieve and over-achieve. • **Question over whether achieved reduction beyond BAU** • **Complexity and level of bureaucracy** • Only certain sectors, including energy intensive sectors. • Suggested that verification procedures in place were not adequate. Question of comprehensiveness and validity of verification process, and **transparency**.

Buildings Regulations	**Carbon Trust**
Strengths • **Mandatory.** • Clear message about improving future building stock. • Will be more effective once the new provisions are applicable. • Building labelling viewed as positive. *Weaknesses* • Question over whether they are, and will be, enforced properly. • Turnover of building stock is so slow that there is limited effectiveness on the stock as a whole. • Still a long way to go for non-domestic buildings. • UK still behind (versus Scandinavia for example). • There are loopholes and builders are finding ways around them, e.g. putting energy efficient light-bulbs in rooms and thinking they have met the requirements. • Strengthening of the regulations could go further.	*Strengths* • **Good overall aims.** • **Helps to overcome barriers.** • More action than before on trying to engage with industry and targeting business energy use. • Helping and therefore reducing costs to industry of meeting legislation and targets, rather than bringing about further emissions reductions. • Capacity building. • Free advice. • Financial resources. • Strong base of intelligence and research capacity. • Independence from government – arms length and credibility. *Weaknesses* • Lack of public awareness of what the Trust is trying to do – need better promotion to a wider audience. • Is it effective in promoting energy efficiency? • Less effective in capturing SMEs. • Scope for more coordination with the Energy Saving Trust. • Insufficient resources (even after Spending Review).

2.3.3 Do the existing UK instruments work well as a package?

There were mixed views on whether the instruments worked well as a package (see Box 2.1), although slightly more people thought that it did work well even though there are a number of limitations overall or with individual instruments.

Box 2.1: Mixed views from interviewees on whether the existing instruments work well as a package

'If we started with a blank piece of paper, we probably wouldn't end up with the mixture that we have…But in terms of the way it has built up, it does work as a package…"' (Government representative)

'As a package the CCP is a mess because each measure has been built up by a different part of government with its own objectives"' (Independent Expert)

'As a package the majority of instruments are quite good, as something is in place to drive forward the different objectives. Would end up with a very skewed energy policy if it wasn't as balanced, with a focus on renewables, some focusing on energy efficiency, a group looking at reducing coal output and cleaner coal and switching to gas, etc.' (Industry expert)

'[in the industrial sector] it is seriously over complex to begin with, and now there is further confusion with the EU ETS' (Independent Expert)

The main criticism of the package was on its complexity and coherence, i.e. how it all fits together and works together, and whether it sends the right signal to business energy-users. One interviewee doubted whether it was actually seen as a 'package'.

Among interviewee from all groups, it was generally felt that there was a clear 'higher level' signal from the government to industry that there is a cost of emitting carbon and of the objective to seriously tackle climate change. This was particularly the case when compared to the message being given to other sectors, such as the transport and domestic sectors. Another clear message was the fact that the UK is taking the lead at the EU level and internationally, for example by being the first country to operate an emissions trading scheme for greenhouse gases. In addition, it was perceived at the time, i.e. before the subsequent proposed revision of October 2004, that that UK had adopted a stricter National Allocation Plan for the EU emissions trading scheme than that of most of its European counterparts.

Where there was less clarity, however, was in relation to specific instruments, where it was felt that signals were stronger for some than for others, and that there were sometimes conflicts in the signals given. The Renewables Obligation, for example, was considered to send strong clear signals (as it was a long-term policy with a clear objective), whereas the signal from the Climate Change Levy was thought to be much

weaker. The majority of respondents supported this view, i.e. that the overall policy message is clear, but there is confusion at the level of individual instruments and how they interact.

The main conflict in the signals given by the different policy instruments was identified as being between the need to price energy high enough to incentivise behavioural change, and the fuel poverty objective of the EWP, which seeks to keep energy affordable. It was considered that there has been a tendency in the past to keep energy prices low, due to both social and political reasons, and that this has done little to reinforce the government's message on the importance of energy efficiency and the negative externalities of energy consumption.

When discussing conflicting messages, however, it was acknowledged that policy instruments, though under the general banner of climate change policy, often have different objectives (see Box 2.2), and this is further compounded by the objectives of the EWP which are different again, as demonstrated in the above example. For example, the Renewables Obligation seeks to drive forward investment in renewables technology and increase the proportion of energy that comes from renewables sources; whereas the objective of the Climate Change Levy is to incentivise more efficient business use of energy. In many ways this is a positive aspect as it means there are measures in place focused on delivering the many inter-linked objectives of climate change policy, e.g. reducing energy demand, increasing energy efficiency, stimulating the development of renewables. Indeed, the CCP is purposefully set out in this way (see Table 2.1). However, the existence of multiple objectives can be a source of confusion as to what the purpose of the individual instrument is; and can be the root of conflicting messages.

Box 2.2: Different signals from different policies

'The fact that there are so many instruments is a signal that the government is trying to meet a number of different objectives and protect so many interests' (Government representative)

'Need to consider energy taxes as meeting energy objectives and not climate objectives. There needs to be a clear setting out of the links between climate change, CO_2 and energy – it is ok if you understand these issues but there is a need for an idiot's guide, for example for Boards. Need to remember that linkages that may appear clear to those in the know might not appear clear to all' (Industry Expert)

Conflicts between climate change policy and other areas of policy were also raised by a small number of interviewees. For example, the expansion of aviation versus climate change objectives; building new homes but not incorporating strict requirements regarding carbon intensity; and meeting water quality objectives of the water framework Directive at the expense of increased greenhouse gas emissions.

A number of interviewees, including representatives from government, expressed concern about whether signals were clear to all business stakeholders, particularly SMEs and non energy-intensive sectors. A small business representative also thought that the benefits of reducing emissions had still not been fully explained to industry (see Box 2.3).

Box 2.3: The understanding of small businesses

'The majority of small businesses will be slightly aware of climate change, but beyond that they are not certain of the reasons for why it is important, why there is a focus on it, and why the UK is doing what it is doing.' (Industry expert)

There was recognition from government that there are some problems with the existing package, and that the instruments vary in whether they are meeting their objectives and driving the changes they were designed to achieve. The overriding attitude was one which was very supportive to increasing understanding of these issues, and feeding this into the review of the Climate Change Programme.

2.3.4 Gaps and overlaps in the existing policy framework

When asked about the overlaps between the UK instruments, interviewees often also mentioned the EU ETS, rather than just looking at the present UK situation. The most common overlap mentioned was between CCAs and the EU ETS. At present a number of companies will be in both, and there was some presumption that the CCAs would eventually be phased out. In the long term some questioned whether there would be an overlap between the CCL and the EU ETS, and whether retaining the tax would mean double regulation for those companies in the ETS. There were other minor comments on the overlaps between the Renewables Obligation and the EU ETS, and on the potential overlaps of climate change with non-climate change measures, such as the water framework Directive and the landfill Directive. The overlaps with the EU ETS are explored more fully in Section 4.

With regard to gaps in policy addressing business use of energy, interviewees raised the following issues:

- Combined heat and power (CHP);
- Measures directly targeted at fuel poverty;
- Policies for adapting to climate change;
- Energy services;
- Industry outside of the CCAs;
- Planning policy;
- Communication; and
- The need for innovation; and, at a higher level,
- The failure to convince the US to sign up to Kyoto.

An additional way industry should contribute to reducing emissions, which was put forward by stakeholders across the board, was in bringing forward new, clean technologies, as industry was potentially the source of innovation. Most of the numerous interviewees who expressed this view did not take the argument further than that, but of the experts, one felt that industry needed to invest more in such technologies, while another argued that industry needs more incentives to develop low carbon products.

Most comments in relation to gaps in the existing policy package focused on the need to address other sectors, notably transport, particularly aviation, the commercial/service sector, the domestic sector, and other low energy users, such as SMEs.

With respect to SMEs, some experts and interviewees from government and industry believed that SMEs could be addressed, as some of them already are, in the same way as other businesses are, particularly via the price mechanism using taxes. Others suggested that it depended on the type of SME, with energy intensive small companies more likely to respond to the pricing mechanism. On the other hand, other interviewees, again from most of the stakeholder groups, argued that it was more difficult to engage in SMEs in the same way that it was difficult to engage households. The principal reasons for this were that, for non-energy intensive businesses, energy costs were not a large part of their expenditure and that the companies were often very small and under-resourced. It was suggested that information needed to be designed, targeted and made easily accessible for SMEs to enable them to respond to climate change and make up for the fact that they did not have teams dedicated to such issues in the way that larger businesses do. Some suggested that energy efficiency should be the focus for SMEs, although at least one interviewee noted that the government had already rejected the possibility of introducing energy efficiency commitments (EECs) for SMEs.

2.3.5 Communication

In addition to the instrument package, itself, many interviewees raised issues relating to the way in which the government communicates its policies to the business sector, and the level of feedback that it provides on the performance of the instruments. There were mixed views from the interviewees, although there were key themes emerging from the comments:

- Responses were split between whether they thought the government communicated clearly or not.
- All interviewees in the policy watcher/academic group, and several others, considered that the government did communicate well on the overall objectives and targets, but this was with the caveat that it was less clear on implementation and what action can be taken at a practical level.
- There was a more negative response from the industry group, where two-thirds of interviewees considered that the government did not communicate clearly on climate change, particularly on the justification of measures and on actions.

Box 2.4: The high level message

'There are enough high level statements, what there is not enough of is hard edge policy implementation in some areas' (Policy expert)

- Comments were made on the mixed messages given, for example on energy pricing.
- Many considered that 'there was still a lot to be done to increase the awareness amongst the public about the links between a changing climate and their own energy usage'. One interviewee referred to an industry study carried out last year, in which it was found that people see climate change as a problem for the government to tackle, not an individual problem: 'the attitude was that if government thought it was important, they should deal with it'.

Box 2.5: Communication and awareness

'There is still a massive lack of awareness about what we are trying to do' (Industry expert)

'[the government] is communicating to businesses, but the message hasn't really got out to the people of the street' (Government representative)

'The Prime Minister talking about it once a year is not enough. Need to address more in relation to domestic action – big speeches tend to focus on international action' (Industry representative)

Some interviewees mentioned the role of the press in sending clear messages to the public, and considered that this is often not done and again conflicting signals are given. For example, one day a newspaper might publish an article on the importance of climate change and the need to take action, and the next they might publish a negative article about rising energy prices, therefore missing the link between the two issues. This is an opportunity that the government itself misses. For example, it was commented that the government could speak clearly about climate change when that is the agenda being discussed, but that it misses the opportunity to make the links with other issues, for example the fuel protests. Indeed, better communication with the public about climate change, both to inform them better of the issues, but also to encourage the appropriate consumer response, was one of the key areas in which interviewees said that government action was needed. Some interviewees also suggested that, in addition to the government, NGOs, business and possibly even the Carbon Trust should be involved in communicating the issues to the public in order to underline the need for individual action.

In terms of feedback from the government, it was felt that a lot of information is available if you know where to look for it, but this tends to be on achievement against overall

objectives, for example emissions projections, rather than reporting back on the performance of individual instruments. It was felt that more systematic monitoring was probably lacking. From a business perspective, the importance of such feedback was stressed, in order to have acceptance of the different measures, for example is the CCL achieving anything or is it just costing companies money? It was recognised, however, that the CCP review should help to address this, and that there needs to be a balance between providing enough feedback but not providing too much so that it becomes indigestible.

SECTION 3 – THE ADVENT OF EU EMISSIONS TRADING

3.1 *Overview of the EU Emissions Trading Scheme*

In 1997, the countries ('Parties') belonging to the United Nations Framework Convention on Climate Change (UNFCCC) signed the Kyoto Protocol[12] with a view to strengthening the UNFCCC commitments to address climate change. According to the text of the Kyoto Protocol, all Parties took on general commitments while industrialised countries (these are the so-called Annex I Parties in the Convention) accepted legally binding emissions reduction targets. These countries agreed to reduce their collective emissions of six greenhouse gases during the period 2008-2012 (the first commitment period under the Kyoto Protocol). To meet their targets, Annex I Parties must put in place domestic policies and measures that cut their greenhouse gas emissions and may also offset their emissions by increasing the uptake of carbon dioxide in by carbon sinks).

The European Union agreed to take on a collective greenhouse gas emissions target of an 8 percent reduction from 1990 levels in the 2008 – 2012 period. The Kyoto Protocol was ratified by the EU in 2002, and it was decided that in order for the EU to meet its targets effectively an efficient European market for trading greenhouse gas emissions should be set up. Directive 2003/87 lays down the characteristics of the emissions trading scheme (EU ETS) in EU law, but leaves many specific decisions to Member States, for example the level of emission allowances to be allocated. The Directive states that for each commitment period of the EU ETS, Member States must produce a National Allocation Plan (NAP) to be submitted to the European Commission for assessment. This NAP must state the total quantity of allowances that a Member State intends to allocate for that period and how it proposes to allocate them. NAPs are assessed by the European Commission to ensure that they are compatible with the Directive; the Commission able to reject the NAP in its entirety or elements of it. Table 3.1 provides more details on the EU emissions scheme and its application in the UK.

[12] *The Kyoto Protocol to the Convention on Climate Change*

Table 3.1 Table providing details of the EU Emissions Trading Scheme, UK application, the sectors affected by it and timescale for implementation and revision

Brief details	Sectors affected and exemptions	Timescale
Directive 2003/87 established a scheme for trading greenhouse gas (GHG) emissions Phase I runs from 2005-2007, and includes only CO2 emissions. Phase II runs from 2008-2012 to coincide with the Kyoto commitment period and will run in parallel to an international scheme. Member States may widen the scope of the scheme in Phase II to apply to activities, installations and associated GHGs not included in Annex I, subject to approval by the European Commission. Operators of plants covered have to hold GHG emission permits, and are allowed to emit up to that fixed allowance. Emitting in excess would incur a fine of €40/tonne of CO2 equivalent before 2007; and €100/tonne from 2008, with the excess having to come out of the following year's allowance. The details of emission allowance allocation and overall caps on allowances are decided by Member States and presented in the form of NAPs for assessment by the Commission. In preparation for the first phase, in the UK, there has been an extensive NAP development process, involving various phases of consultation. The proposed level of allowances in the UK NAP has been revised upwards several times. In the last phase of revision the allowances were increased but as was the percentage reduction needed by industry, hence the government claims this is not just weakening of the level of allowances. The main sector required to make reductions under the UK NAP are the power generators In addition to the Directive there are other EU measures which give Member States guidance in relation to elements of the EU ETS. These include guidance on the development of NAPs (COM(2003)830) and reporting guidance and reporting guidance (Commission Decision C(2004)130)	**Status:** Mandatory **Applies to:** Activities listed in Annex I of the Directive, which includes electricity generators, oil refineries, iron and steel production, cement clinker and lime production, glass manufacturing, brick and tile manufacturing, pulp and paper. In addition installations in any sectors that have combustion plants of a thermal input of over 20MW, including aggregated plants on a single site, are also covered (hospitals, universities and large retailers may find themselves included under this provision). **Exclusions:** In the Directive Member States won the right to exclude installations from the first phase of trading so long as national policies, limit their emissions as much as would be the case if they were subject to the provisions of this Directive. The European Commission has agreed a temporary exclusion of 63 UKETS installations from the EU ETS for the first two years.	On 1 January 2005 phase I of emissions trading should commence. The European Commission is to present a report on progress by mid-2006 and make recommendations on how the scheme is to be further developed, including whether more activities and other GHGs should be included in Phase II. According the Directive by Jan 2007 Member States must have developed NAPs for the second phase of EU trading ie 12 months before the commencement of the period.

3.2 Review of the Relevant Literature

Ever since discussions began on the development of an EU emissions trading scheme, policy watchers have been putting forward views on how such a scheme would work, and how it would integrate with existing policy on climate change. With the adoption of the Directive in 2003, and as negotiations began to take place at a national level on implementation and the development of National Allocation Plans, the level of interest and literature has escalated. This section therefore seeks to give a flavour of the main views coming across in the range of studies, press releases and statements reviewed, rather than being a fully inclusive 'literature review'. A comprehensive list of references used to inform this study can be found in Appendix I.

The adoption of the EU ETS was met with mixed responses. Whilst a coalition of environmental NGOs welcomed it as a 'significant step forward'[13], it was less welcomed by many in the business community, who feared the impact it would have on competitiveness. However, the CBI and many others, for example BP, were supportive of the establishment of an emissions trading scheme, having argued for some time that in principle it represented the most cost-effective way of reducing emissions. Despite this, the CBI did express concerns about its mandatory nature, scope and the compatibility of the EU scheme with other policies and measures in the UK Climate Change Programme.

In the course of the implementation of the EU ETS in the UK, the differences in opinion on the EU ETS were centred on the following key issues:

- Allocations, or emission reduction targets, in the UK NAP;
- How the UK NAP compares to those of other Member States, and the effect of this on competitiveness and liquidity of the emissions trading market; and
- Compatibility with existing policy.

3.2.1 Allocations in the UK National Allocation Plan

Much of the debate on the EU ETS has focused on the first point: the development of the UK NAP and the allowances contained therein. In particular, this was in response to the publication of the draft plan in January 2004, and during the consultation period that followed. Under the draft, the government set a reduction target of 16.3% for the first phase, rising to 20% in the second – in line with domestic targets for 2020. This was faced with great opposition from industry groups, who urged for a cap set in line with the Kyoto obligation of a 12.5% reduction in emissions on 1990 levels by 2008-12. The CBI, though supportive of emissions trading, criticised the government for 'risking the sacrifice of UK jobs on the altar of green credentials'[14]. Others, including Philippe Varin, the Chief Executive of the steel maker Corus, warned that the draft plan was 'too restrictive and will significantly affect the price of electricity'[15]. At the other extreme, environmental groups called for the Phase I cap to be aligned with the national target of a 20% cut in CO_2 by 2010, believing that this would be achievable[16]. John Cridland, deputy

[13] Environmental NGO Joint Statement by CAN Europe, WWF, Greenpeace, RSPB and Friends of the Earth, 2 July 2003.

Director-General of the CBI, stressed, however, that this 'is not an issue of business against the green lobby'; rather, the industry sector had some concerns[17].

As draft plans from Member States were released, it was clear that the UK had opted to go further than its European counterparts, and this fuelled the lobbying position being taken by industry. Indeed, industry has been very active in lobbying throughout Europe, so much so that according to some observers 'in most cases those efforts resulted in lax emissions targets, complex special allocations to powerful interest groups and in some cases even in over-allocation compared to actual emissions.' [18]

At the UK level, the target for Phase I in the NAP submitted to the European Commission on 30 April 2004 was lower than in the draft: 15.2% reduction in CO_2 emissions on 1990 levels. The Phase 2 target of a 20% reduction remained the same. Although recognising that the UK was still taking a leading role, this amendment was met with much disappointment by environmental groups. In a press release, John Lanchberry, Head of Climate Policy at the RSPB, criticised the move as 'drifting further away from the 20% carbon reduction target the Government has set for 2010 for the UK', and adding that 'if the ETS really is to be the flagship of EU climate policy, the Commission must insist that countries such as Italy and Germany improve their NAPs and do their fair share. Otherwise, the EU trading scheme will achieve very little in the next three years.'[19] Green Alliance pointed to the conflicting messages sent by government, given its recent statements on the seriousness of climate change: '…this target has been fundamentally weakened thanks to industry pressure and newly pessimistic business-as-usual emissions forecasts for key sectors…This climb-down is a mistake. What business fundamentally requires from Government is clarity and firmness of purpose'[20].

The government announced its intention to amend the plan, which had already been approved by the European Commission, at the end of October 2004 (after this research had been undertaken), increasing the number of allowances that would be made available in Phase I. Ironically, throughout the NAP process the government had been very vocal in criticising other Member States' plans for being too weak, and had repeatedly called on the European Commission to take a strict approach when assessing them. The revision was therefore met with further disappointment from environmental groups and British opposition parties, who viewed it as a step-down on the UK position. The change also spread fears that other Member States would do the same, causing concern over the liquidity of the allowances market, but also over the timescale implications so near to when the scheme is to be launched. The Environment Minister, Margaret Beckett, insisted, however, that the revised plan was in fact stricter on UK industry and was 'good

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[14] Tessa Thorniley, UK industry braced for carbon fallout damage, Telegraph 23/02/2004 http://www.telegraph.co.uk/money/main.jhtml?xml=%2Fmoney%2F2004%2F02%2F23%2Fccarb23.xml&secureRefresh=true&_requestid=61547

[15] Telegraph, 23/02/2004 op cit

[16] Tom Delay in Telegraph 20/3/2004 op cit

[17] Telegraph 20/3/2004 op cit

[18] Butzengeiger, S and Michaelowa, A (2004), *The EU Emissions Trading Scheme – Issues and Challenges*, Intereconomics, May/June 2004.

[19] UK leads poor EU emissions plans, RSPB, 7/5/2004

[20] Collins, J (2004) *The unstable politics of climate*, Parliamentary Newsletter 26 April to 7 May 2004

news for tackling climate change'[21]. The allocations were reviewed in light of a 7.6% increase in the projected emissions of installations covered by the EU ETS, and new CCAs agreed with industry. The new plan increased the number of allocations available in the first phase by 19.8 million allowances to 756.1 million allowances. However, it is now 5.2% below final projections of business as usual in the UK, compared to the April allocation of 0.7% below business as usual. On 10 November the proposed amendments were submitted to the European Commission, who now need to approve the plan before decisions can be taken on UK allocations. In response to the UK's initial announcement, the Commission had indicated that it would treat the new proposed amendments as a new plan.

3.2.2 Comparisons with other NAPs: Competitiveness and Liquidity Issues

Concern over the comparative targets between Member States is shared by the majority of stakeholders, irrespective of whether they are coming from an environmental, business or other angle. However, the reasons for this concern are quite different. While industry has fears over the effect on competitiveness, others recognise that the success of the scheme in driving increases in energy prices, establishing a high enough price for carbon and delivering emissions reductions, lies in the level of allocations across all participants.

In terms of competitiveness, this has been an issue of intense debate in the UK and indeed across Europe: Exactly what effect would the EU ETS have on the competitiveness of industry, particularly when firms were competing with those with more generous allocations in other Member States, or those outside of the EU? The CBI warned that the risk to UK industry could be high if domestic targets are excessive and if other European Union economies do not deliver on their targets: 'The government must implement rules and targets for the UK that do not undermine the ability of companies and plants to compete and it must ensure consistency across the EU.' [22]

Analysis by the EIC in 2003 suggested that the scheme is likely to affect all industrial and commercial customers, as the costs will be passed on through end users' bills. Generators, it said, could have the opportunity of increasing wholesale prices by between 10 and 15%[23]. The DTI support this position[24]: 'Whether or not they are directly included within the coverage of the ETS, all industries, as consumers of electricity, will be affected by the introduction of the ETS'. Modelling of the impact on different sectors in Phase I was carried out using data on energy expenditure and assumptions for price increases for energy[25]. This research concluded that:

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[21] Defra press release, 27/10/2004
[22] CBI http://www.cbi.org.uk, 12/3/2004
[23] Smart, V (2003) *EU Emissions Trading: A ticket to raise power prices?* Centre News, Issue 3 2003.
[24] DTI (2004) Competitiveness, Trade and Regional Implications of the EU Emissions Trading Scheme. http://www.dti.gov.uk/energy/sepn/euetsimplications.pdf
[25] Price increases for electricity as a result of the introduction of the ETS were assumed to be 6% (low) and 30% (high) over the period 2005-10, based on a carbon price of €5-25/tCO2 (£12-60/tC)2. Gas costs were assumed to increase by 7.5% (low) and 38% (high) on the basis of this range of carbon prices, and the cost impacts for other fuels were based on the same carbon prices.

- At a carbon price of €5/t CO_2, assuming full pass through to energy costs and with no allowance for behavioural change in energy consumption, increases in industry costs as a proportion of value added range from 0.4% to 3%.
- Industries facing the largest potential increases in energy costs in relation to industry gross value added or sales include starch products, malt, paper and paperboard, industrial gases, inorganic and organic chemicals, fertilisers, bricks, cement, iron and steel, aluminium and lead, zinc and tin.
- All sectors will face increased competition in third markets from countries not subject to the ETS.
- The water supply industry is a relatively high energy-intensive industry and provides an important input to many production sectors. On the basis of its energy consumption, which is almost entirely electricity, the industry might experience an impact of between 0.3% and 0.8% of gross value added or between 0.2% and 0.5% of industry turnover.
- The impact on petrol prices as a result of the ETS is estimated to be between 0.08p and 0.4p per litre as a result of the increase in the costs of oil refineries. This represents an increase in the cost of petrol of between 0.1% and 0.5%. Since fuel accounts for around a third of the total costs of operating an HGV, this might lead to an increase in road transport costs of between 0.03% and 0.17%.

A quantitative economic modelling study completed by the Carbon Trust, however, concluded that the EU ETS would not harm the competitiveness of British industry – provided that the scheme is implemented similarly across all Member States. Professor Michael Grubb, Carbon Trust Director of Policy, said, 'UK industry has been very concerned that the EU ETS will cause British business to lose out due to global competition, or because of differences in national allocation plans (NAPs) within Europe. In contrast to this, our study reveals the EU ETS will not harm the competitiveness of virtually all industry sectors in Europe. Indeed, most sectors will not find it hard, at a minimum, to maintain current levels of profitability once the scheme is in place, and several could gain'[26]. The study, which looked at five different UK sectors[27], concluded that the aluminium sector is the only industrial sector whose competitiveness is likely to be damaged. This message, however, was with the caveat that if final NAPs varied considerably and some Member States gave surplus allowances to certain industries, this could distort competition in the EU for some sectors, notably steel. A subsequent report by ECOFYS[28] concluded that based on comparisons between Member States' NAPs at the time of its study, there is 'significant potential for competitive distortion as a result of the scheme, particularly from the difference in scope of the scheme in Member States'.

In addition to concerns over competitiveness, there are also fears that if NAPs are not strict enough and there are surplus allowances in some Member States, this will affect the liquidity of the whole emissions trading market, i.e. the price of carbon. Therefore decisions taken in, for example France or Italy, will affect the way that the EU ETS

[26] Carbon Trust press release 2/7/2004.
[27] Electricity, cement, paper (newsprint), steel and aluminium (smelting)
[28] **http://www.ecofys.co.uk/**,

operates in the UK. The success of the EU ETS hinges on the NAPs, and whether they are strict enough to deliver an appropriate price for carbon and incentivise reductions in emissions. At a hearing of the European Parliament's Industry and Energy Committee in April 2004, an expert from the Oko Institute for Applied Ecology warned that more harmonisation would be needed [at the EU level] over the period 2008-2012, if the EU ETS was going to succeed[29]. It was considered that 'the EU ETS is a grandiose experiment that could pave the way for the EU becoming a pioneer in market mechanisms to counter global change. However, a timid approach to the national allocation of allowances could reduce the credibility of the instrument and prevent learning that will be crucial for later, deep cuts in greenhouse gas emissions'[30].

3.2.3 Compatibility with existing UK instruments

The literature on existing UK instruments, before the advent of the EU ETS, was reviewed in Section 2.2. Issues that arose with respect to the advent of the EU ETS were principally that it was an additional layer that had to be made to work in an already complex policy environment.

3.3 Research Findings

The majority of interviewees, no matter what their background, were supportive of the fact that there will be an EU emissions trading scheme in place shortly. It was recognised that the scheme is an unprecedented experiment and that in theory it should provide a broad market for carbon, as well as encouraging the reduction of carbon emissions in a flexible and cost effective way EU wide. Interviewees were, however, in most cases, also quick to point out that the scheme will only achieve this promise if emission allocations are limited to the extent that a significant price for carbon is established, thereby enabling trading and the market to function effectively (see Box 3.1). Many acknowledged that any accomplishments of the scheme are dependent on the successful implementation by all Member States. It was also highlighted that judgements as to the success of the scheme should not be made too hastily as this is a novel measure and it will take time for systems to work effectively and for those who are wary of the system to adapt.

[29] *Parliamentary Committee sounds out the experts on emissions trading*, ENDS Daily, 30/4/2004
[30] Butzengeiger and Michaelowa, op cit

Box 3.1: Reaction to the EU ETS

'The scheme is potentially fairly progressive, but there is potential for weakening if Member States don't enforce this progressive view in terms of emissions. It is a big opportunity i.e. bigger market providing lots of opportunity for trading. There is a potential opportunity for those over achieving to sell. However, this is all price dependent - which is a very important consideration' (Industry expert)

'[EU ETS] will help deliver UK climate change policy. Ultimately it becomes a huge part of the delivery of carbon reductions in the UK if the scheme works properly' (Industry expert)

'[EU ETS] will help the UK meet its Kyoto commitment, but it has to be done properly' (NGO)

'Achievement of [the EU ETS] depends largely on how it is implemented' (Industry

3.3.1 The Strengths and Weaknesses of the EU Emissions Trading Scheme

As can be seen in Table 3.1 there are certain strengths of the EU scheme, which are acknowledged by all the four groups of stakeholders interviewed. These are:

1 That the scheme is an **EU wide scheme** with **mandatory** involvement across all 25 Member States;
2 That it should lead to the **reducing carbon emissions** and bring Europe closer to meeting its Kyoto target;
3 That is should allow a **price for carbon** to be generated; and
4 The use of **trading as a tool** is a potentially cost effective and would allow flexibility.

Despite the consistency of views overall there were several other points of interest raised by individuals or by certain groups. Only industry groups highlighted the political importance of having the EU emissions trading scheme up and running, i.e. that it sends a message to those who are against this type of action. Political issues were also highlighted by government officials but in terms of the lessons the implementation of this measure has taught them regarding the commitment of other Member States to climate change issues and the pressures experienced elsewhere in the EU.

Another interesting cluster is that several of the experts felt that a positive aspect of the scheme is the theoretical simplicity of the measure, i.e. that it is one trading scheme and that the Directive and theoretical base has been well thought out. With regards the future of the EU emissions trading scheme an important message is that Member States should learn from the first phase, i.e. using the diversity of implementation across Member States in order to develop experience-based good practice.

In relation to the weaknesses of the scheme (outlined in Table 3.2) there is less consensus. There were only two main themes highlighted by all groups, although it must be said that these are fundamental issues. The first is that differences in the application of emissions trading in Member States may lead to distortions in the market. In other words, what should be a level playing field is actually a series of different levels due to the different methods used to, for example, identify their overall cap on emissions, allocate allowances, and monitor, report and verify emission reductions. This is a symptom of the high level of subsidiarity in the EU Emissions Trading Directive and is one of the causes of concern regarding the competitiveness of industries. In order to get all Member States to agree to the Directive high levels of Member State discretion had to be allowed, and this has led to what some feel has been a 'race to the bottom'. This 'race to the bottom' is the second major issue raised by interviewees. It has meant that some Member States have proposed high levels of emissions allowances for industry, often based on business as usual projections. There is concern that the caps on emissions are not stringent enough under the scheme (as a whole, many referred to the allocations of other Member States). If the cap on emissions is too high there will be a very low price for carbon removing the incentive for businesses to reduce emissions.

Linked to the concerns relating to over allocation are criticisms from some interviewees that the National Allocation Plan process has become too politicised and that the Commission's assessment of plans has not been vigorous enough. Some feel that all the negativity surrounding the allocation process may undermine the scheme and will cause difficulties during the second phase of emissions trading – when in theory allocations will have to be tightened up. Several of the policy watchers/experts have suggested that action should now be taken to harmonise some elements of the scheme to reduce the possibility of there being a second race to the bottom in Phase II.

Table 3.2 – Table showing the strengths of the EU Emissions Trading Scheme identified by different groups of interviewees

Government	Independent groups/ NGOs	Business	Experts/Policy Watchers
▪ **An EU wide scheme with mandatory involvement in all Member States** - 'Covers half of the EU's carbon with a firm cap – can't get better than that' 'A big plus is that it is mandatory' ▪ **Reducing carbon emissions** – 'Could be an extremely important policy tool and could well be successful' 'Some step towards bringing the EU nearer to [its Kyoto] target (although will not necessarily mean we achieve it)' ▪ **A price for carbon** – 'Fairly simple process of getting a price on carbon. Better than a tax as the market sets the price' ▪ **Trading as a tool** - 'The Energy White Paper says trading most effective instrument so hoping that is will prove to be the least cost market solution' ▪ **Subsidiarity** - 'Member States have been allowed discretion to try to transpose the Directive so that is suits their own starting position' ▪ **A learning opportunity** – 'There is flexibility in terms of allocation setting methodologies, benchmarking etc…. therefore there will be a high diversity of systems which provides an opportunity to learn a lot in relation best practice' ▪ **Better understanding of other Member States** – 'Given the UK government a better view about where other Member States stand in relation to climate issues. Have been able to see who is making an effort to meet obligations' ▪ **Encouraged wider action on climate issues** – 'It has jolted people to say implement a Climate Change programme i.e. identify what it is expecting from other sectors' ▪ **Sectoral coverage** – 'Includes electricity generators' National Audit Office, 'Brings in major carbon emitters, e.g. generators and refineries, sends a significant signal in power-generation market for the first time' -	▪ **An EU wide scheme with mandatory involvement in all Member States – '**Single scheme across Europe instead of piecemeal, approximately half of EU emission covered, mandatory involvement of companies' ▪ **Reducing carbon emissions – '**Rewards those making efforts to cut carbon' 'Will help the UK meet its Kyoto commitment, but it has to be done properly' ▪ **A price for carbon – '**A price on carbon across sectors in a way that will cover the whole EU is a huge step forward' **'**Puts price on carbon' and should 'internalise externalities' ▪ **Trading as a Tool** – 'Market based' and 'Cost effective if done properly'	▪ **An EU wide scheme with mandatory involvement in all Member States – '**Tradable across the EU therefore large market and should lead to reasonable amount of liquidity, transparency and certainty' ▪ **Reducing carbon emissions – '**Ultimately should reduce the amount of carbon being emitted because of the financial penalties. Should encourage investment in cleaner technology' ▪ **A price for carbon - '**Wider area of EU will be beneficial for the market, better price for carbon' ▪ **Trading as a Tool – '**In principle is an excellent scheme…Any market driven tradable scheme tends to be good' 'Flexible – can decide whether to do energy efficiency themselves or trade' ▪ **Political Message - '**Great potential, would be the largest trading market which is a very import clear global message and an important political step' 'if we can get EU emissions trading to work it will be very difficult for those across the world who argue against trading to genuinely maintain opposition' ▪ **Level playing field** – 'Consistent rules [EU wide] therefore should be level playing field' ▪ **Allocations** – 'From UK perspective, permit allocations have been based on historic emissions data'	▪ **An EU wide scheme with mandatory involvement in all Member States – '**Large market and mandatory' industry expert; 'Good that it is mandatory' climate policy expert; 'It is a robust model covering the whole of the EU' climate change expert; 'The scope of coverage i.e. 25 Member States, means in theory there should be a meaningful market' climate policy expert ▪ **Reducing carbon emissions – '**In theory should be the ideal instrument for reaching Kyoto targets' climate policy expert ▪ **A price for carbon – '**Price to carbon – unlike the CCL' climate policy expert ▪ **Trading as a Tool – '**In principle, could achieve reductions in carbon at a significantly lower cost than many of the other policies' climate change expert; 'It is relatively simple being a cap and trade system' climate change expert; 'Flexible – next NAPS can be tougher' climate policy expert ▪ **Sectoral coverage – '**covers a large number of sources' climate change expert; 'Comprehensive scheme as opposed to the UK scheme which excludes electricity generation' climate change expert ▪ **Simplicity – '**relatively simple [policy measure] being a cap and trade system' climate change expert; 'one of the best Directives in terms of simplicity and clarity' industry expert; 'Very well designed scheme' climate policy expert ▪ **Low pilot Phase targets – '**three year pilot Phase with light caps has kept the cooperation of business and was probably the way to take it forward' industry expert; 'Pragmatic compromise between the ideal and what was politically feasible' climate policy expert

Table 3.3 – Table showing the weaknesses of the EU Emissions Trading Scheme identified by different groups of interviewees

Government	Environmental groups/ NGOs	Business	Experts/Policy Watchers
▪ **Differences between Member State implementation leading to distortions** – 'Conflicts between Member States on competitiveness distortions of the NAPs – it could undermine the whole thing'; 'Discretion brings difficulties due to differences which may have materially different effects on competition. There is an issue in relation to new entry policies, big questions relating to overlaps, growth rate assumptions, allowances may be given to incumbents and on top of this they may be allowed more allocations. There are very different investment incentives across EU'; 'Competitiveness issues if MS have less stringent caps' ▪ **Scarcity of allowances** – 'Not yet clear if there will be scarcity of supply of credits in the EU'; 'To be a credible ETS it needs credible caps – question over the robustness of caps set by other Member States' ▪ **Price of carbon** – 'Too easy for Member States to buy credits rather than take action themselves, not good from a sustainable development point' ▪ **Assessment of National Allocation Plans** – 'The NAP approval system has been far too politicised, the Commission has not delivered a vigorous assessment based on Annex 3 which was so painstakingly negotiated' ▪ **Bad precedent for Phase II** – 'Everyone will have problems negotiating Phase II with industry because of the discretion allowed has meant there has been a race to the bottom in the first phase. All this doesn't bode well for Kyoto compliance' ▪ **Scope of the scheme** – 'Interface with the way electricity is handled – misses a trick in terms of encouraging demand side energy efficiency improvements'; 'Would be better if the EU ETS allocations were more in line with Kyoto targets', 'No non-CO_2 gases at the moment'	▪ **Differences between Member State implementation leading to distortions – '**Subsidiarity of NAPs' ▪ **Price of carbon – '**Prices will probably be quite low so the impact will be less that it could be, especially in Phase 1 – as the caps have been set low across the EU'; 'Not clear what the price will be' ▪ **Scarcity of allowances –** 'Not material enough – although it is only Phase 1. Switch to gas won't happen in Phase 1' ▪ **Scope of the scheme – '**Limited sectors – this needn't be a weakness as long as others are covered elsewhere DTI view ETS as all that is needed – this would be a weakness' ▪ **Assessment of National Allocation Plans – '**Commission wasn't able to moderate all NAPs at once – had to look at as they came in. Some Member States may have waited for others to submit their plans before submitting their own. Commission not strong enough'	▪ **Differences between Member State implementation leading to distortions – '**Issues re liquidity and tradability if not all [Member States] are playing to the same rules**'**; 'Lot of politics being played between Member States on how to implement the scheme. Suspicion that the UK has gone further, and others have gone for a business as usual approach' ▪ **Scarcity of allowances – '**Disappointing as it is weakened because of a lack of stringent requirements'	▪ **Differences between Member State implementation leading to distortions** - 'Variable application meaning variable burden meaning that there may well be financial flows from high burden to low burden countries' industry expert. ▪ **Scarcity of allowances – '**Whether the EU ETS will result in carbon savings will depend on how many permits are granted, and this is not yet clear. This is the Achilles heel' climate policy expert; 'The cap being set at MS level – early indications show that it will be weak' climate policy expert; 'If the Phase 1 cap is weak, the affected industries may not contribute as much as they could or should to a Member State burden sharing target' climate policy expert ▪ **Assessment of National Allocation Plans – '**The Commission gave an enormous amount of leeway for NAPS' climate policy expert; 'It is difficult if Member States are acting unilaterally and NAPs are political documents' industry expert; 'The Commission has not shown itself to be able/willing to affect significant change to Member State NAPs with different approaches' ▪ **Harmonising implementation** - 'concerns about a lack of a single auditing standard' industry expert; 'There are some areas where decisions should be harmonised' climate policy expert; 'Too much subsidiarity built in, this was the price the Commission had to pay to bring all Member States on board' industry expert ▪ **Scope of the scheme – '**Doesn't engage energy users in the correct way because it is aimed at producers. Therefore it is not likely to affect consumption reducing its effect' climate change expert; 'There is a possibility that the way the system is set up, i.e. based on grandfathering, may act as a disincentive to higher efficiency gas fired power stations with companies keeping coal fired stations running longer … as these can be managed to reduce emissions' climate change expert ▪ **Bad precedent for Phase II – '**Whether there is political will to ensure 2008/2012 programme is really consistent with targets' climate change expert

3.3.2 Implementation in the UK

In contrast to opinions expressed on the EU emissions trading scheme, in relation to the UK's National Allocation Plan (NAP) interviewees were divided with regards the level of UK allowances outlined and its acceptability.

Box 3.2: Contrasting views on the UK NAP

'Were seeking for government not to go beyond Kyoto. The UK could have been in the position as a seller of permits rather than a buyer. There have been increases in energy efficiency as a result of other measures and would have liked to have seen businesses rewarded for early action. This will especially be an issue during the second phase' (Industry expert)

'[the UK NAP is] very weak and disappointing, especially as it doesn't match the 2010 domestic CO2 target and doesn't support the goals and aspirations of the Energy White Paper. In terms of allocations, feel that too many have been given' (NGO)

Despite these critical extremes many interviewees were, however, supportive of the Government's approach – treating the scheme as '*a credible option for reduction*' Climate Change Expert – and, although disappointed at the weakening of the NAP before it was submitted to the European Commission, felt that the outcome was an acceptable compromise given the tensions that exist (see Box 3.3)[31]. Several interviewees felt that the UK NAP that had been provisionally approved by the Commission outlined the issues well and many were supportive of the lengths to which the government had gone to include them through consultation procedures, etc. It was noted that there was still confusion especially in relation to the benefits of opting into the EU scheme versus remaining within the UK system and two interviewees felt more should have been done to advertise the benefits of joining the EU scheme now. There was an appreciation that developing the NAP was a difficult task completed under considerable time pressure. Linked to this acceptance, however, was the caveat that lessons should be taken on board from this Phase to ensure that the UK target does not drop too low (as this would lead to a loss of credibility), that allocations should be stricter post 2008 and that future NAPs should be presented earlier. The lateness of the NAP has created a variety of difficulties, not least for those companies who proactively want to engage in trading, in this Phase: '*it was difficult to move the debates internally regarding inclusion in the scheme'*. There is concern amongst some industry representatives that they have still not seen the final NAP and that there may not be adequate time to respond to the final allocations.

[31] It is worth underlining again, at this point, that these views were expressed prior to the Government's announcement of October 2004 that it intended to further revise the NAP that had previously been provisionally approved by the European Commission.

Box 3.3: Views on the UK National Allocation Plan, September 2004

'The UK has taken a sensible approach, but more important than that is whether other Member States show the same level of commitment' (Government representative)

'It should be tighter to meet the 20% domestic target, but recognises the tensions that exist. The UK can lead, but also need to keep an eye on competitiveness issues. If you get other Member States not being as ambitious the UK will run into problems' (Government representative)

'The ETS is set firmly in the context of the overall UK Climate Change Programme and is helping to meet the 20% target. It is unfortunate that very few other Member States did the same thing. Most other plans are fairly weak' (Government representative)

Many interviewees compared the UK's approach to the NAP to those of other Member States. There was a general perception that, despite its weakening compared to the consultation draft, the UK NAP stood up well when compared to others, although this was before the proposed revision of October 2004. There was also a suggestion that the UK NAPs weakening may have been due to the approaches taken by other Member States.

3.3.3 Threats, Opportunities and Driving Business Action

Uncertainty was the main issue to emerge in relation to threats and opportunities for UK businesses. Although many interviewees suggested scenarios most acknowledged that in practice these depend entirely on the price of carbon, the liquidity of the trading market and ultimately on the level of caps set by Member States. The quote below is a typical example:

> *'The extent to which it will encourage business action will depend on the caps. If right it will send strong signals. If too loose the carbon price would be too low and so won't do anything'* (Government representative)

Essentially, if the price of carbon is too low it will not pose a threat to business, neither will it open up new markets, alter business practice or present investment opportunities. It was felt by some that in the long term a reasonable price could be achieved, however, this was not likely in Phase I. A price suggested, below which major investment would not take place, was '*€20 per tonne*' (Climate Change Expert).

Assuming that trading is effective, suggestions made by interviewees for business opportunities included: first mover advantage; the development and potential for exporting clean technologies; investment in projects under the Clean Development Mechanism and Joint Implementation; and that reducing emissions means becoming more energy efficient hence reducing costs. Many also identified that there will be considerable opportunities in those industries which support the trading system, i.e.

verifiers, lawyers, traders etc, and that this could potentially generate significant employment. It was also highlighted that companies operating in the UK in these areas have an opportunity to sell their expertise, which has been developed though the UK emissions trading scheme (see Box 3.4).

Box 3.4: Opportunities presented to UK expertise

'Traders and project developers are now very active – there is a chance to sell its expertise across the world' (Government representative)

Many interviewees highlighted that the existence of a trading system and a price for carbon makes the issue of carbon emissions more visible and will force companies to think commercially about carbon emissions – as they are, now, in theory a source of revenue or cost depending on how they are managed. This is a potentially powerful method of altering practice, e.g. bringing carbon discussions into the boardroom, and allows the cost of inaction to be incorporated into the business case for investment in e.g. clean technologies (see Box 3.5). It was felt that the EU scheme would especially encourage business action in those sectors not previously part of carbon reduction mechanisms. At a UK level there is a particularly strong message aimed at the power generation sector within allocations, in that they need to take action now as the government has highlighted that sector as where the most cost effective reductions can be made.

Box 3.5: Business' response to emissions trading

'In theory it should [alter business practice] as it puts a cost on the emission of carbon, so for the first time will think commercially about whether you want to emit or not. Simplistically, do we want to burn the permits or sell them? It stimulates thought and drives behaviour. BUT it only works if all Member States act the same and don't issue too many permits. Will only achieve aims if there is a shortage of permits in the system' (Industry expert)

'It will raise profile in boardrooms of climate change as a result of them talking about what they are going to do about carbon risks, it will affect business decisions. This will be the case, as it will now involve real money. It will take a while to happen, as people are very risk averse as illustrated by the UK ETS, it therefore takes time for people to reap the benefits.' (Government representative)

In relation to threats to industry competitiveness most interviewees acknowledged that there would be both winners and losers as a consequence of the EU scheme. Many, however, expressed their support for the conclusions of the Carbon Trust's work, regarding impacts on industry, feeling that EU trading, in the first phase at least, does not pose a systematic threat to UK businesses. The issue of UK business paying more than those in other Member States, if implementation is not consistent, was regularly highlighted, as was the fact that there are international competitiveness issues. However, these were felt to affect only specific sectors and were felt to have been

over-played by some, as the majority of UK trade is with other EU Member States. One industry expert suggested that there will be '*higher energy costs, but this threat was already there because of Kyoto therefore there was always going to be a cost'*.

3.3.4 Lessons to be Learnt from the First Stage of Implementation

We are only at the beginning of the journey in relation to emissions trading and interviewees were keen to point out issues that must be considered or addressed as the scheme develops both in terms of Phase II and more generally. This should be taken as a positive as all interviewees were keen to discuss the future of the scheme suggesting that across the board there is support for trading going forward and over the long term. Key issues to be considered are:

- It is important not to judge to outcomes of the scheme too early on, as it is a complex mechanism that is going to encounter problems along the way.
- Concern already about Phase II and that it may be difficult to get commitments from business to tighten up their emissions due to the race to the bottom experienced so far in Phase I.
- The European Commission needs to be stricter regarding the implementation of emissions trading and the design and content of the NAPs.
- The high level of subsidiarity in the Directive means that there are many different approaches being taken by Member States. In the second phase, it is important to learn from this wide experimentation to ensure that the best techniques are used in this Phase. Essentially, therefore, we need to see the first phase as an opportunity rather than only be critical of what could have worked better: '*Phase II must be more robust and uniform*' (Industry expert).
- Some areas need to be harmonised, e.g. new entrant reserves, rules for banking, verification.
- Ensuring that the first phase is evaluated at a time when there is enough experience to learn from Phase I, but which would also allow sufficient time for these lessons to be taken on board in Phase II.

SECTION 4 – IMPLICATIONS OF THE EU EMISSIONS TRADING FOR THE FUTURE OF UK POLICY

4.1 Overview of the implications of the EUETS on UK climate change policy

One of the most thorough analyses of the implications of the EUETS for UK climate change policy was produced by Steve Sorrell in 2003[32], through the European Commission funded project *Interaction in EU Climate Policy (INTERACT),* and subsequent reports and papers building on this work. The report explored the implications of the addition of the EUETS to what is termed an already 'crowded policy space'. It looked at seven instruments, including the CCL, CCAs, the UKETS,

[32] Sorrell, S (2003) Back to the Drawing Board: Implications of the EU Emissions Trading Directive for UK Climate Policy, SPRU.

IPPC, the Renewables Obligation and the Energy Efficiency Commitment, commenting on the scope, timing, objectives and operation of the measures.

Table 4.1 Interaction Issues for each of the Selected Instruments

Acronym	Double regulation	Double counting	Differential treatment	Linking
CCL	✓			
CCAs	✓	✓	✓	✓
UK ETS (DPs)	✓	✓	✓	✓
UK ETS (projects)		✓		✓
IPPC	✓		✓	
RO	✓	✓		✓
EEC	✓	✓		✓

Source: Sorrell (2003)

The report concluded that the EUETS would have major implications for the first four of these, and 'non trivial' implications for the latter three. Four generic issues were raised in each of the cases.

- ***Policy interaction and 'double regulation*** - the extent to which any apparent 'double regulation' will be seen as imposing unfair burdens upon particular target groups. Double regulation may be loosely defined as a situation where an individual target group is affected by two or more instruments that have very similar objectives. While 'double regulation' is a negative term, there may be many instances where the interaction between policy instruments may be either acceptable or positively beneficial.

    - ***Ownership of emissions and double counting*** - The issue of 'ownership' and 'control' of carbon emissions, and the problems that arise if ownership is disputed. For example, the EUETS gives the ownership of emissions from electricity generation to power stations, while much of UK climate policy gives ownership to electricity consumers. Ownership disputes may lead to: a) *double coverage*, where two instruments give ownership of the same physical emissions to two separate parties, (or to the same party under two separate terms); and b) *double crediting*, where disputing claims over the ownership of emissions allow two separate carbon allowances or carbon credits to be generated from a single abatement action. Each type of problem introduces complexity into the regulatory situation and double crediting may threaten the environmental integrity of an emissions trading scheme.

    - ***Differential treatment and equivalence of effort*** - the extents to which different groups are treated differently by environmental policy instruments and whether the obligations imposed upon one group can be deemed equivalent to those imposed upon another.

- ***Linking trading schemes and the fungibility of trading commodities*** - the extent to which two trading schemes may be linked by the exchange of environmental commodities. This will depend on the *transfer rules*, which may restrict movements in either direction or discriminate between commodities according to their origin, and the *exchange rules* which establish the equivalence of commodities with different denominations. The combination of these rules defines the *fungibility* of the trading commodities, ie the extent to which the commodity used for compliance with the first scheme can also be used for compliance with the second.

As these instruments form the core elements of the UK CCP, Sorrell recommends that these will need to undergo significant changes. Given that the EU Directive had not been agreed at the time of the UK's Climate Change Programme, the implications were not considered when negotiating and designing the different policy instruments. Sorrell stated that **'**The EU Directive has driven a coach and horses through UK climate policy and could lead to substantial adjustment costs as a result. There is a need for a strategic debate on the preferred shape of UK climate policy into the first Kyoto commitment period (2008-2012) and beyond and on the role of the EU ETS within the UK policy mix.'

In thinking about the way forward, he concluded that 'The UK government is now faced with a choice between either accepting the coexistence of the EU ETS with UK climate policy, or replacing or modifying a number of policy instruments only a couple of years after they were introduced. The first option leads to double regulation, complexity and additional cost burdens for affected groups, while the second implies changing a complex and finely balanced policy mix which took several years to negotiate ...Neither option is attractive and both will attract opposition. The extent of disruption will depend on the nature of the changes that are proposed…'

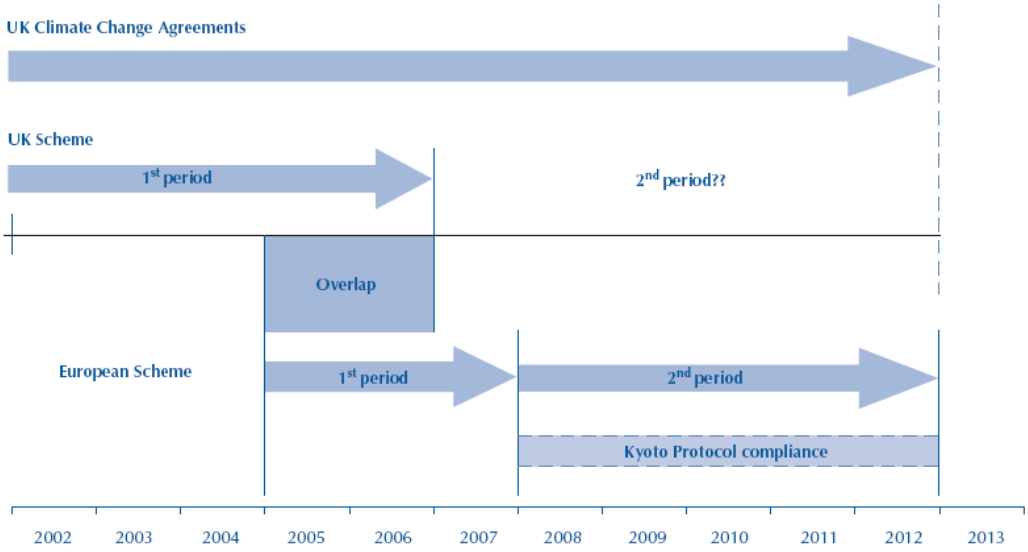
A number of studies have looked at the compatibility between the two trading schemes. Although one of the objectives of the UK emissions trading scheme was to have a 'dry run' in preparation for the EU scheme, there are many fundamental differences between the two that will make integration less straightforward than was hoped (see table 4.2). The NAO report on the operation of the UK scheme highlighted the most fundamental difference between the schemes as the way in which they treat emissions from electricity generation[33]. The European scheme assigns responsibility to electricity generators, whereas in the UK scheme (and in the CCAs), it gives it to consumers. As commented by the Sorrell report, this, it says, leads to the potential for double counting, where emissions allowances may be created for both the producer and consumer of electricity. In addition, the NAO report refers to the timescale differences of the two schemes, and indeed other instruments currently in place (see Figure 4.3), which will force companies to make hard decisions about whether to participate in the UK or EU scheme. When the EU scheme is launched in January 2005, the UK scheme will have a further two years, and it is not yet clear whether there will be a second phase. It is suggested that it could continue to allow agreement participants to continue trading.

[33] NAO (2004) *The UK Emissions Trading Scheme: A New Way to Combat Climate Change*, Report by Comptroller and Auditor General

Friends of the Earth (FoE) have also raised concerns about the implications of the EUETS for UK climate change policy[34]. It considers that the CCL and CCAs will need to be revised. These instruments, its report says, address both upstream fuel combustion and downstream electricity consumption, and once in operation, for many participants the latter will be covered by the EUETS. This will open the government up to criticisms of double regulation. It suggests that this can partly be resolved by amending the name of the CCL to reflect that it is an energy tax with the primary aim of reducing energy demand, rather than reducing emissions.

In relation to the overlaps between the EU and UK trading schemes, FoE think that rather than discontinuing the UK scheme, as others have suggested, instead it could continue to operate but as a second and parallel market to the EU scheme. This, it proposes, would cover direct emissions from those sectors and gases excluded from the EUETS, and would have the additional advantage of preparing the ground for the future expansion of the EU scheme.

Figure 4.3 Timelines for UK Policy and the EU Scheme



Source: NAO op cit, adapted by NAO from Irving, W17, 2002 'The Interface between the UK ETS and the proposed European directive on greenhouse gas emissions trading'

The CCAs are another instrument considered as having major overlaps with the EUETS. Hobley and Blackmore[35] considered that 'it may be difficult to substantiate the discount [on the levy]…when the installations become required to achieve these or similar targets under EU law.' The government, it says, may be faced with a decision on whether it can continue with the whole CCL package, ie the CCL and CCAs, once the EUETS is firmly in place. Rather than doing this, however, a report by Cambridge Econometrics and the Policy Studies Institute consider that the transition to a low-

[34] Worthington, B (2003) Implementation of the EU Greenhouse Gas Emissions Trading Directive and UK Climate Change Policy, Friends of the Earth.
[35] Hobley, A and Blackmore, S (2002) *Greenhouse Gas Emissions Trading in the United Kingdom and EU Compared: The Same Destination, Different Routes*, Environmental Liability, Volume 10 Issue 2, April 2002.

carbon economy is by no means certain, and that fiscal/tax measures that encourage a more efficient use of energy could be required in the long term. On a positive note, it also predicts that, with the UK set to join the EU emissions trading scheme in 2005, the domestic policy goal of 20% carbon reduction is far closer to achievement, providing the price of tradeable permits under the scheme rise sufficiently to reduce emissions, and coal in power generation declines sharply.

Table 4.2 Differences between the EU and UK Emissions Trading Schemes

	UK ETS	EU ETS
Timing	• 1st period 2002-2006 • No guarantee of 2nd period, but review in 2005.	• Phase 1 2005-2007 • Phase 2: 2008-2012.
Target	• Absolute targets for direct entrants. • Absolute or relative targets for CCA participants.	• Absolute targets for all participants.
Sectors included	• All industrial sectors eligible except power generation. • Transport, landfills, households exempt.	• Combustion plant >20MW, including generators • Subset of IPPC sectors, but excluding chemicals, food and drink and waste incineration
Size of market	• 34 direct entrants (~ 1 MtC-reductions over 5 years) • Much larger number of CCA businesses (~ 2.5 MtC/year).	• 4000-5000 installations • 45% of EU carbon dioxide emissions
Allocation	• Financial incentive (auction) for direct entrants • Negotiated energy saving targets through CCAs.	• Free during Phase 1. Member States have the option to auction up to 10% of allowances in Phase 2 • Commission retains the right of veto over national allocation plans
GHGs	• All six GHGs. • Non-CO_2 sources require development of monitoring protocols.	• Only CO_2 in Phase 1 • Other gases may be included in Phase 2, provided adequate monitoring and reporting systems are available and provided there is no damage to environmental integrity or distortion to competition
Links with IET/JI/ CDM	• Intention to allow UK companies to trade internationally during 1st commitment period. • Possibility of using CDM credits before 2008.	• Emission credits from JI and CDM projects to be recognised, subject to 'modalities' to be adopted by the EU by 2005
Links with other schemes	• Mutual recognition between UK and other national trading authority would be necessary.	• Commission may conclude agreements with third parties to allow mutual recognition of allowances
Monitoring/ Reporting/ Verification	• Guidelines prepared for using methodologies and reporting emissions. • Baselines and annual reporting to be verified by third party.	• Common monitoring/verification/reporting obligations to be elaborated. Verification through third-party or government authority.
Allowance tracking	• Allowances tracked by electronic registry. • Registry to evolve into Kyoto Protocol registry in 2008. • Gateway will limit transfers from relative to absolute sector.	• Linked/harmonised national registries with independent transaction log, based on Kyoto Protocol registry guidelines.
Compliance	• Loss and repayment of financial incentive for direct participants. Statutory penalties to be introduced. • CCA participants have a separate compliance procedures.	• 40 Euro/tonne penalty across EU. • Increased to 100 Euro/tonne after 2008
Banking	• Unlimited banking until the end of 2007. • Banking into 2008 only allowed for reductions from absolute sector made by businesses themselves (no buy to bank).	• Banking across years within each compliance period • Member States can determine banking from first compliance period (2005-2007) to commitment period (2008-2012).

Source: Sorrell, S (2003) Back to the Drawing Board: Implications of the EU Emissions Trading Directive for UK Climate Policy, SPRU

4.2 Research Findings – Impact on UK Climate Change Policy

As already stated many interviewees are positive about the introduction of the EU Emissions Trading Scheme and many see it as forming the cornerstone of UK policy in the future.

'It embeds trading at the heart of UK policy' (Climate policy expert)

In terms of its impact on existing policy, interview responses can be categorised under the following three headings:

(i) Loss of domestic control over emissions reductions;
(ii) The effect of the EU ETS on individual instruments; and
(iii) The need for clarity and coherence.

4.2.1 Loss of Domestic Control over domestic reductions

At present, although policy direction may be steered by international or EU action, the UK is not reliant on the commitment of other countries in order to meet its domestic emissions targets. The UK government has developed policies and they are in theory in control of the outcome. Numerous interviewees noted that under the EU Emissions Trading Scheme UK policy, and its achievements, it will be driven by a broader mechanism, which will rely on the actions in other countries in addition to those completed domestically. In particular, the price of carbon will be guided not by the level of allocations in the UK but by allocations and availability of allowances across the EU (see Box 4.1). As highlighted in Section 3 there are concerns that EU wide there will be a surplus of allowances potentially leading to a low price for carbon, an in efficient market and low levels of carbon reductions. There is also the issue that if the system works effectively you may miss domestic targets despite a decrease in emissions across the EU as least cost emissions savings may be located else where. The importance of this issue will increase if, as intended, the EU scheme becomes a major plank of domestic policy. It was noted by several that this all has potential political implications and requires a shift in mind set on the part of the government, i.e. there will need to be an alteration in the way policy objectives are framed e.g. domestic reductions of X by Y may not be cost effective in an international system, hence may not be delivered.

In addition to impacting on the way policy achievements are phrased, the change from a domestic to an international focus will alter the UK government's advocacy role internationally. It was acknowledged that the UK is relatively active in promoting climate change internationally. However, as several interviewees commented this diplomatic role will have to increase as direct domestic control over emissions decreases in order to ensure commitment and effective implementation of measures in other countries. Some suggested that industry who support e.g. EU emissions trading could have a role in spreading the word in relation to its benefits in practice and the opportunities it provides. It was felt that this could generate bottom up pressure for action in addition to top down pressure from formal diplomacy.

Box 4.1: The loss of domestic control over emissions reductions

'Achievements will be driven by the strength of action and commitments of other people in the scheme as well as ourselves. Therefore the UK will need to focus more on making a better case and making better use of links and contacts at a group level.' (Government representative)

'[The] level of emission reductions achieved depends on the price of carbon in the EU. Therefore it depends on the targets of other Member States' (Climate Change Expert)

The loss of domestic control over emissions reductions led to some interviewees identifying the need for more proactive UK advocacy at the European and international levels to ensure that action taken in other countries is sufficient to ensure that the UK meets its reduction targets. However, others raised the need for increased UK advocacy in the broader sense in that it will need action from all countries, particularly the major polluters, such as the US, Russia, China and India, if climate change is really going to be addressed in the longer-term. Indeed, engaging large polluters and developing the international climate change policy framework beyond the timescales covered by Kyoto was seen as a key action that needs to take place.

4.2.2 Effect on the UK Climate Change Programme and on specific instruments

Table 4.3 outlines the interviewee's views in relation to the UK policy package and possible changes in light of the EU ETS. Although responses are mixed, interviewees generally divided their responses into two distinct types of action. The first type can be categorised as what should happen immediately in order to accommodate the EU ETS in Phase I; the second related to the longer term alterations needed to ensure that if, as intended in the Energy White Paper, the EU ETS expands to become the central plank of UK policy, that this transition is smooth. It was considered that the former changes would involve only 'tweaking' the existing instruments to ensure complementarity and that certain sectors do not experience disproportionate costs as a consequence of overlaps. It was felt this should be undertaken as of January 2005 to ensure the schemes smooth introduction and to ensure support for the scheme is maintained. It was emphasised that this 'tweaking' should also be used to make existing UK instruments more effective in their own right.

In the longer term it was considered that if the Energy White Paper aim is to be realised, domestic policy must evolve over time to accommodate the expanding EU ETS. Several felt if in the future the scheme is expanded and functioning well many of the existing domestic measures should fall away. This was felt to be necessary for reasons of clarity, and also to reduce potentially negative double counting. However, it was often commented that the government should not take action prematurely, with 'major surgery' being left until there is a greater understanding of the outcomes of the ETS. Potential over dependence on the EU emissions trading scheme was also highlighted as an issue, as was the fact that if complementary UK instruments fail, more pressure will be placed on trading to deliver (see Box 4.2 for examples of quotes).

Box 4.2: Comments on the role of the EU ETS

'ETS is a hard instrument to get off the ground and should caution against judging its achievements too quickly. There are concerns at the moment that the system is too lax but also if costs had been high there would have been higher resistance and more complaints. There is a policy risk associated with international instrument as so many aspects are beyond our control and it is hard to keep in control in order to achieve what you want' (Government representative)

'If/when the EU scheme becomes the corner stone hope the other measures will fall away' (Industry expert)

'It's possibly a case of retaining the existing mix for some time until the EU ETS begins to bite' (Government representative)

Table 4.1 contains the comments made by all interviewees regarding individual policy instruments. As can be seen there was some divergence in views as to the extent of change that would be necessary and what instruments need to be altered when, for example on whether the CCL and CCAs could co-exist with the EU ETS or whether they needed to be scrapped. In the context of comments on the timing of changes to instruments, issues raised by interviews regarding each instrument are summarised below.

- **CCA** – Despite the fact that many felt that the CCA is one of the more effective UK instruments (see Section 2.2) many felt this would be one of the measures that needs to be tweaked in the short term. Concerns were raised about the compatibility of this voluntary scheme with the mandatory EU ETS. There were also concerns about double counting in terms of emission reductions and whether or not those with EU ETS commitments should be removed from the CCA process. In the long term some felt that the CCA would fall away once the EU ETS is functioning effectively and covers more sectors.
- **CCL** – Regarding the CCL there was a great deal of divergence of views regarding what its future should be. The issue of overlap, efficiency and the potential burden for certain businesses was raised, although, many thought that the CCL and EU ETS could coexist. Some questioned whether the CCL is needed, while others felt small adjustments should be made in the short term with a more thorough assessment of its effectiveness once the EU ETS is established and functioning well. Several suggested that having an energy tax to address carbon emissions is confusing and that the CCL should be altered to be a carbon tax. The need to maintain a price signal for those businesses not covered by the EU ETS was raised, together with the fact that levy may need to rise to be more effective.
- **UK ETS** – Individuals from all the stakeholder groups surveyed felt that there are obvious overlaps between the EU ETS and UK ETS. They raised the issue of whether the UK ETS could continue to function effectively when companies have left to enter the EU scheme and whether it would be necessary during Phase II.
- **ROs** – As outlined in Section 2.2 many felt ROs to be an effective instrument and in the short term most felt that they should continue, and possibly have their life further extended. In the longer term, if/when an effective price of carbon emerges then interviewees suggest that the scheme will need to change either becoming redundant or being brought into trading.

In relation to the policy mix in the future, many highlighted that there is likely to still be a need for demand focussed measures to complement EU emissions trading. People were also keen, however, to highlight that a future policy set up should be simpler than the existing one. The issue of zero environmental benefit regarding the development of instruments in addition to the trading was also highlighted, and should be considered when developing future policy (see Box 4.3).

Box 4.3: The issue of zero environmental benefit

'Issue of zero environmental benefit - once in the EU scheme, any other instruments that either directly or indirectly interacts with the EU ETS has a zero environmental benefit, any policy instrument that has an effect on participants in the scheme – direct or indirect – has zero environmental impact and won't reduce emissions. For example, if tax electricity it will incentivise industry to use less, therefore there will be less demand from generators – generators will then get surplus allowances' (Climate Change Expert)

In addition to impacts on UK climate change policy there are potential interactions with other policies, which may in the long term need to be addressed. For example, emissions trading may lead to an increase in the price of energy. In terms of energy efficiency this was welcomed, however, the government will need to consider how this marries with its White Paper objective regarding fuel poverty.

Table 4.3 outlining the responses of interviewees in relation to changes to UK policy instruments

	Government	Independent groups/ NGOs	Business	Experts/Policy Watchers
General	▪ 'Many say that with the EU ETS in place we don't need anything other than on the demand side (use), but disagree' ▪ 'It's possibly a case of retaining the existing mix for some time until the EU ETS begins to bite' ▪ 'UK policy needs to adapt to take account of EU ETS becoming the dominant policy, not sure how but will need some adaptation' ▪ '[UK policy mix] doesn't HAVE to [alter to accommodate the EU ETS], but it should. Need to slim down the number of policies' ▪ 'A bit early to say, might have to [alter policies] the EU scheme will grow this will make it more difficult to have other instruments to reduce emissions sitting alongside the EU scheme'	▪ 'Not really significant implications for those outside the scheme, which equals most of the energy use' ▪ 'Lot has been done on making sure that overlaps are addressed. Overall the policies are quite complementary'	▪ 'Can understand that the government want to wait and see how the EU ETS works but its introduction does prompt the need for a review of the CCP. The White paper talks of the EU ETS becoming the core of the CCP for business. If this means the EU ETS being widened and expanded to other sectors and increasingly significant targets then you have to look at CCP measures' ▪ 'the issue is whether the other [UK polices] deliver' Need some tweaks. Not so much to accommodate the EU ETS, just to make sure that all instruments deliver'	▪ 'Not sure there are a lot of tough implications. In the future, when thinking of climate change policy, will have to make sure it is consistent and complementary' ▪ UK CCP does need to significantly change. There will be enough flexibility in the EU ETS Phase 1, to enable it to evolve so that by 2008 in Phase 2 the two regimes are complementary ▪ [EU ETS] helps to achieve emission reductions, but not as much as originally hoped therefore there is a need to think about other measures. Overall the policy framework is ok' – ▪ 'An important point is [the issue of zero environmental benefit] that once in the EU scheme, any other instruments that either directly or indirectly impacts on participants will increase the overall costs of meeting the emissions cap. Note that this conclusion does not apply to all policy instruments, merely those that directly or indirectly interact with the EU ETS. For example, if tax electricity it will incentivise industry to use less, therefore there will be less demand from generators – generators will then get surplus allowances (not relative to output).' ▪ The sooner the UK rationalise the better. ▪ 'Main implication is that the Government will look very hard at the effectiveness of the EU ETS which will hopefully cause it to look at the efficiency of other policies' ▪ 'If/when the EU scheme becomes the corner stone hope the other measures will fall away'
CCA	▪ 'The CCA can't carry on as before. Can't have mandatory caps compatible with a voluntary agreement. They will need to be re-jigged to fit in' ▪ 'Need to get people out of the CCAs if they are covered by the ETS' ▪ Concern about the overlap between CCA and ETS' ▪ 'ETS and CCA – how will they sit comfortably' 'Would see point of keeping CCAs, but need to address issue of double taxation' ▪ 'CCAs have the longer life-span (2013), which overlaps with the EU scheme – this may need to change'	▪ 'Need to make sure double counting doesn't happen in terms of CCAs - needs to change a lot to accommodate the EU scheme' ▪ 'CCA will need to be adjusted to accommodate ETS'	'CCA will fall away, has to, as there is too much conflict'	▪ 'In the short term the CCA will need to be re-thought' Climate policy expert 'CCA will need to change… Retaining the CCA not an alternative… The ultimate goal of getting rid of CCAs' ▪ 'CCA …needs to change initially'

CCL	▪ 'The CCL doesn't need to change. It could have some exemptions' ▪ In a way it doesn't make sense to overlap the ETS and CCL. The government will need to think about that. ▪ 'CCL tax on same reductions is a bit of a problem resulting in a possible double burden - concerned about overlap CCL and ETS and concerned about the efficiency of diff sectors have to deal with different instruments'	▪ 'The CCL can coexist' ▪ 'CCL will need to be adjusted to accommodate ETS'	▪ there are already significant overlaps between the CCL and the EU ETS with some companies being potentially negatively affected by overlaps' ▪ 'CCL will fall away has to as there is too much conflict' ▪ 'Question whether CCL is needed' ▪ 'Don't think there should be a presumption that the CCL needs adaptation to fit'	▪ 'CCL will need to change…. The CCL needs to change to become a carbon tax; remove it from electricity; extend it to oil. Need to a system whereby you're either in the trading scheme or are paying tax' ▪ 'at the end of the day CCL can be accommodated with only a slight modification' ▪ As the EU moves to longer Phase have to consider CCL and scope of the EU scheme but not initially. ▪ Operation of CCL – 'if we have a quantity mechanism of trading we don't also want a price mechanism, so should close it down' ▪ 'Preference would be to have a carbon tax and little else, but if we are going down the emissions trading route, then it is inconsistent to also have a tax based mechanism'
UKETS	▪ 'Issue of integrating the EU ETS with the CCA and direct participants in the UKETS, and how well that is done could have significant effects on the size and liquidity of the UK market and prices of allowances in the UK scheme'	▪ Overlaps between the UK and EU schemes ▪ 'UK-ETS – will there definitely be a 2nd Phase? If it does carry on it needs to be alongside the EU scheme, and make sure no double counting'		▪ Obviously the UK ETS will change. ▪ The UKETS is likely to disappear – unlikely to be a 2nd round' ▪ 'UK ETS needs to change initially'
ROs	▪ 'Rocs will ultimately need to change' if the EU ETS does what is promised it should not be needed as it should push the price of none renewables up making renewables more attractive. However, will need this measure until C price high enough to support and competition signalling and investment incentives from EU ETS should bring about- ▪ 'ETS and RO – how will they sit comfortably' ▪ 'ROs – possibly not needed if the carbon price is right'		'RO – main thing is the extension of its life. Need clearer policy on capital grants for new renewable technology'	'If the EU ETS is to be the main market based instrument then the other mechanisms, such as energy … RO, need to be brought within the trading framework'

4.2.3 Clarity and coherence

Coupled with the concerns about instruments individually there were overarching concerns expressed regarding the complexity of the policy package. This is a concern already in the UK, however, the EU scheme will add an additional layer of intricacy to the policy mix. The ability of business to cope with all these instruments, and make appropriate decisions, was highlighted as a concern – particularly in the case of SMEs. The issue that climate change policy should be more joined up with other policy was also highlighted, so that policy is moving in the same direction and easily understood.

If the EU ETS is successful, many expressed the hope that the policy mix will become more easily understandable and long term. This is because they envisage trading becoming a central pillar to the policy mix potentially reducing the number of instruments. In addition it is hoped that the international nature of the trading scheme will result in it being more politically robust over the long term, i.e. it will not be subject to the whim of any one Member State government (see Box 4.4).

Box 4.4: The EU ETS as a permanent fixture

'It would become a permanent feature of the business market, not likely to change at the whim of the next government. If it becomes part of the business mindset it would be beneficial' (Industry expert)

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