

EU EMISSIONS TRADING SCHEME PHASE II (2008-2012)

OVERARCHING

FULL REGULATORY IMPACT ASSESSMENT

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1. TITLE OF PROPOSAL

EU Emissions Trading Scheme (EU ETS) Phase II (2008-2012)

1.1 This Regulatory Impact Assessment (RIA) is concerned with Phase II of the EU Emissions Trading Scheme and sets out options for different overall cap levels.

1.2 This overarching RIA refers to the general approach to the second Phase of the Scheme, and the options for the overall level of allocation to operators (the cap). A number of supporting RIAs cover the key secondary policy issues:

- **Auctioning:** the level of auctioning for Phase II;
- **Project credits:** the limit on the use of, Kyoto mechanism credits from Joint Implementation (JI) projects and the Clean Development Mechanism (CDM);
- **Allocation methodology:** the distribution of the total number of allowances (the cap) amongst installations;
- **Expansion:** options to expand the Scheme to include additional carbon dioxide (CO₂) emissions from new and existing sectors;
- **New Entrant Reserve:** treatment of installations that open or close during the Phase II period, after submission of the NAP.

2. PURPOSE AND INTENDED EFFECT

2.1 OBJECTIVE

2.1.1 The EU ETS forms an integral part of the UK and EU's strategy to tackle the challenges posed by climate change. The broad objective of the current EU ETS is to reduce greenhouse gas emissions from installations and activities covered by the Scheme in order to meet obligations under the Kyoto Protocol. In Phase II, the EU ETS aims to help achieve the EU's Kyoto target for the UK. It will also help to reduce CO₂ emissions from included sectors in order to make progress towards the UK's domestic target of a reduction in CO₂ levels by 20% by 2010 on 1990 levels. UK participation in the EU ETS is a legal requirement, as set out in European Directive 2003/87/EC.

2.1.2 The aim of the EU ETS is to induce reductions of CO₂ emissions at the lowest cost to firms and the economy. This should be facilitated by the use of auctioning which enables firms that find emissions abatement costly to purchase allowances to emit from those firms that are able to reduce their CO₂ emissions more cheaply. By fixing the total level of emissions the scheme should ensure the overall reduction targets are met

2.1.3 The EU ETS policy-making process reflects Defra's commitment to the Better Regulation Agenda and as with any complex policy, offsetting simplification measures have been considered throughout the development of and implementation of, policy options. In particular where there have been

requirements additional to those of the Directive, these have, as far as possible, been optional (i.e. business can choose for themselves whether to take advantage of them). Consideration has also been given to the overlap between Schemes. In the coming months Government will be looking at the impact of regulation associated with climate change and the impact that this has had on business.

2.1.4 In general terms the objective of phase II of the EU ETS is to build on Phase I of the scheme and move towards a more efficient system so that Kyoto commitments can be met at least cost.

2.1.5 The Government's objectives for the National Allocation Plan (and therefore the cap and related decisions) are:

- The total quantity of allowances in Phase II should be consistent with the trading sector's contribution to achieving the national climate change goal, that is reducing carbon dioxide emissions by 20% below 1990 levels by 2010;
- To be consistent with the Energy White Paper commitment to put ourselves on a path to cut the UK's CO₂ emissions by some 60% by about 2050, with real progress by 2020;
- To make the EU Emissions Trading Scheme the central plank of our future emissions reductions policies, including expansion of the Scheme where appropriate;
- To facilitate development of an economically efficient EU-wide trading market which:
 - Incentivises emissions reductions;
 - Provides appropriate signals for longer term investment in emissions reduction in regulated sectors
- To maintain the competitive position of UK industry relative to the EU, whilst minimising the impact of the EU ETS on the competitiveness of UK industry relative to industries outside the EU;
- To be consistent with other related Government policies such as the revised Climate Change Programme; and
- To be consistent with the Government's market based approach to maintaining the reliability of energy supplies.
 - Signal the Government's long term aim to move away from free allocation of allowances;
 - Encourage the take-up of cleaner technology (e.g. combined heat and power).

2.1.6 In particular, the Government's specific aims for Phase II are to:

- Learn lessons from Phase I and address any anomalies or gaps that may have arisen from implementation in the first Phase.
- Create as level a playing field as possible for industry through harmonisation with other Member States [on definitions etc]
- Look at the scope to include further CO₂ from existing sectors.
- Reduce the burden on small emitters.
- To simplify the Scheme where possible.

2.2 BACKGROUND

2.2.1 Directive 2003/87/EC was transposed into national legislation via the Greenhouse Gas Emissions Trading Scheme Regulations 2003. The Regulations entered into force on 31 December 2003, and were amended and consolidated by the Greenhouse Gas Emissions Trading Scheme Regulations 2005, which came into force on 21 April 2005¹.

2.2.2 The first phase of the Scheme, Phase I, started on 1 January 2005 and runs for a 3 year period (2005 to 2007). The approved UK National Allocation Plan (NAP) for the first phase was published on 24 May 2005².

2.2.3 The second phase coincides with the first Kyoto commitment period (2008 to 2012). The Phase II NAP is required to be submitted to the Commission by the end of June 2006, with final installation-level allocations submitted by 31 December 2006³.

2.2.4 Implementation of the EU ETS is a devolved matter in the UK. In light of this, where the UK position is described in the remainder of this document, this be taken to mean the agreed view of the UK Government and the Devolved Administrations.

Simplification and Better Regulation

2.2.5 The policy making process reflects the Government's commitment to the Better Regulation Agenda and offsetting simplification measures have been considered throughout the development of policy options.

2.2.6 In addition to the specific objectives listed above, the Government also aims to consider the interaction between EU ETS regulations and other climate change instruments such as Climate Change Agreements.

2.2.7 The Commission guidance on the preparation of NAPs reflects many of the priorities of the Better Regulation agenda. In particular, the Commission urges Member States to work towards simpler plans in the second trading period in order to boost stakeholder understanding of the instrument, reduce complexity of implementation across the EU25 and increase transparency.

2.3 Rationale for Government Intervention

2.3.1 The Intergovernmental Panel on Climate Change (IPCC), in its Third Assessment Report, stresses the need for urgent action to tackle climate change. Recent climate change at a regional level has already affected many

¹ Available from: <http://www.hmso.gov.uk/si/si2005/20050925.htm>.

² See <http://www.defra.gov.uk/environment/climatechange/trading/eu/nap/approved.htm> for a full list of installations covered in the first Phase.

³ This is a challenging deadline and in order to learn lessons from Phase I and to expand the Scheme to cover the activities set out in the revised Commission Guidance, the UK Government recognised that it was not possible to collect and process the data in time to meet the first of these deadlines. The Government submitted its NAP as soon as possible after the June deadline.

physical and biological systems, and there are preliminary indications that some human systems have been affected by recent increases in floods and droughts. Furthermore, an expected rise in global temperature of between 1.4 and 5.8°C by 2100, and steadily rising sea levels, will result in significant impacts, particularly in developing countries that tend to have a limited capacity to adapt.

2.3.2 At Kyoto in 1997, in response to the threat of climate change, most developed countries agreed to legally binding targets to reduce emissions of the six main greenhouse gases. The European Community committed to an 8% reduction, and Member States agreed to share out this target. The UK agreed to cut its emissions by 12.5% as part of the burden sharing agreement. Additionally, the UK adopted, as part of its Climate Change Programme, an ambitious national goal to reduce CO₂ levels by 20% on 1990 levels by 2010⁴. In the 2003 Energy White Paper the Government stated its intention to put the UK on a path to a reduction in CO₂ emissions of 60% by 2050, with significant progress by 2020⁵.

2.3.3 One of the means by which the international community proposes to cut greenhouse gas emissions is through emissions trading, one of the so-called “flexible mechanisms” established by the Kyoto Protocol. In advance of a global scheme, the EU ETS allows company-level trading across Member States. As a market-based instrument allowing the trading of emissions “allowances” between operators across the EU, the EU ETS should lead to emissions reductions being achieved where it is most cost-effective to do so. The Scheme also aims to encourage business investments in abatement technologies to help EU Member States achieve the emissions reductions necessary to meet their Kyoto Protocol targets for 2008 to 2012.

2.3.4 It is mandatory that all EU Member States implement the EU ETS Directive, therefore there are risks from not fulfilling UK legal obligations in the EU. In particular, the UK would face infraction proceedings from the EU if it did not implement the Scheme.

2.3.5 In addition, the EU ETS is a key policy in a range of measures adopted by the UK in its Climate Change Programme to realise its domestic targets.

2.3.6 The recent Stern Review has highlighted the benefits of early action and highlighted the need for a carbon price signal across countries and sectors to ensure that emission reduction are delivered in the most cost-effective way.

³See <http://defraweb/environment/climatechange/uk/ukccp/index.htm>

⁵See: <http://www.dti.gov.uk/energy/policy-strategy/energy-white-paper/page21223.html>

3. CONSULTATION

3.1 WITHIN GOVERNMENT AND THE DEVOLVED ADMINISTRATIONS

3.1.1 The Department for Environment Food and Rural Affairs (Defra) is working closely with the Department of Trade and Industry (DTI) and the devolved administrations of Scotland, Wales and Northern Ireland on the implementation of the second Phase of the EU ETS⁶. HM Treasury, Department for Transport, Cabinet Office, the Foreign and Commonwealth Office, the Office of Fair Trading, the Small Business Service and the UK Permanent Representation in Brussels (UKREP) are also consulted regularly on policy issues.

3.1.2 The regulators have a key role to play in EU ETS implementation, and therefore a close dialogue with the Environment Agency (EA) in England and Wales, the Scottish Environment Protection Agency (SEPA) in Scotland and the Chief Inspector in Northern Ireland has been established. Additionally, the offshore sector is regulated by the DTI.

3.2 PUBLIC CONSULTATION

3.2.1 The Government has consulted widely throughout the development of the Phase II policy including:

- On 31 March 2005, the UK Government published an informal communication paper outlining the general approach to Phase II of the EU Emissions Trading Scheme (EU ETS), and inviting views on a range of issues relating to the potential shape and scope of the Scheme. The paper included discussion of potential expansion to CO₂ and non-CO₂ gases, the use of auctioning and project credits, lessons learned from Phase I and stakeholder engagement for Phase II.
- On 19 July 2005, the UK Government launched a preliminary formal consultation detailing its intended approach to EU ETS Phase II, aiming to gather information and stakeholder views on number of issues. this consultation was also publicised through the Emissions Trading Group (ETG), by email and on the Defra and DTI websites. To ensure that this consultation was as effective as possible, a programme of focused stakeholder engagement was held alongside the consultation with both trading and potential expansion sectors. The Government commissioned independent consultants to analyse over 230 responses to this consultation.
- A further formal consultation was published with a draft National Allocation Plan (NAP) in March 2006.

3.2.2 A report on each of these consultations including a summary of responses and an explanation of the Government's intended approach has been published. Areas where stakeholder feedback has proved particularly

⁶ Regulation 46 of the Greenhouse Gas Emissions Trading Scheme Regulations 2005 contains express provisions regarding the agreement of the Devolved Administrations in relation to the exercise of certain powers by the Secretary of State.

useful in helping to develop policy include: in the creation of a separate Good Quality CHP sector, in developing benchmarks, projections and expansion, Stakeholders were closely involved in all of these areas and engaged in a constructive dialogue with Government throughout the development of Phase II.

3.2.3 In addition a series of stakeholder events have been held to accompany a number of the formal consultations listed above. These events gave operators a chance to raise specific questions on Phase II. Events to explain the optional allocation methodology rules for Phase II and how these would operate in practice were also held. These gave operators a chance to highlight how they felt these rules would apply to them and raise any issues regarding their implementation.

3.2.4 Industry are kept informed of developments and are asked to feed into the process through regular meetings with the Emissions Trading Group (ETG), in which all large industrial EU ETS sectors are represented. The UK Government also meets regularly with key environmental NGOs and other interested parties. During the development of Phase II, the ETG prepared several papers on the policies being proposed. These papers were particularly helpful in getting expert opinion on proposed options. They have been used and much referred to throughout the development of policy. In addition much of the content of the papers will also act as a reference point as we develop our policy for future phases and will help inform our approach to the Commission's Review of the Scheme. The Phase II pages of the Defra and DTI websites are regularly updated with information regarding current consultancy contracts that have been let and announcements regarding policy developments.

3.2.5 The Government has been gathering and analysing evidence to inform decision-making on the Phase II NAP as well as on the shape and scope of the Scheme. Analysis of responses to the summer (July to September) 2005 and March 2006 consultations, as well as the output of a significant number of research contracts, views and signals from other Member States and revised guidance from the Commission on the preparation of NAPs, have all been feeding into the development of the draft NAP and Phase II policy. An analysis of responses to the March 2006 consultation is published alongside this RIA.

4. OPTIONS

4.1 This RIA considers the different options for the setting of the UK cap. The impact of EU ETS on CO₂ emissions, industry costs and costs to UK Government depends not only on the level of cap, but also on other aspects of the implementation of the EU ETS Directive and other carbon reduction policies. For example, a Government delivering significant reductions in non-traded sectors could set a relatively lax cap in order to meet its Kyoto targets. A Government may choose to purchase JI and CDM credits and hence set a more generous cap for the traded sectors. Similarly, the level of auctioning and size of the new entrant reserve may influence the overall stringency of the

cap. These issues are covered in separate RIAs. RIA considers only the direct costs and benefits associated with setting the cap at different levels.

4.2 The Government previously consulted on a range for the cap level of between –3MtC and –8MtC below business as usual projections. Options for the cap level are set out below but it should be noted that other levels of cap between Options 2 and 4 have been considered. Option 2 outlines the bottom end of the range, as published in the draft NAP for consultation in March and Option 4 outlines the corresponding upper end of the range. The only option presented here between the bottom and top end of the range is Option 3, which would set a Phase II cap at the same level as in Phase I.

Option 1 Do not set a cap limit

Option 2 Allocation of 252 MtCO₂ per annum, a reduction of 3.8MtC effort below business-as-usual (BAU) projections.

Option 3 Allocation of 245 MtCO₂ per annum, a reduction of 5.8 MtC effort below BAU projections.

Option 4 Allocation of 237 MtCO₂ per annum, a reduction of 8 MtC below BAU projections.

5. COSTS AND BENEFITS

5.1 There are significant uncertainties associated with the analysis of costs and benefits of differing UK emissions Cap levels. One key variable that affects analysis is the level of assumed carbon price in the market for Phase II. The EU market price of allowances will be determined by the supply and demand for allowances. Key drivers of the allowance price include the aggregate EU allocation (i.e. the combined total level of allowances for all Member States), availability of allowances from Clean Development Mechanism or Joint Implementation projects, relative fuel prices, abatement costs and innovation opportunities across EU ETS sectors. It is important to note that the level of the UK cap will only affect the carbon price to the extent that the UK cap contributes to total number of EU allowances available.

5.2 In order to assess the costs and benefits of the options presented in section 4, the main impacts of setting different cap levels are identified and explained, and then a brief summary of the main considerations of each option are discussed.

5.3 Main impacts

5.3.1 Impact on national and international objectives and guidelines

5.3.1.1 The EU ETS Directive (2003/87/EC) specifies in Annex III that allocations should be consistent with a path to meeting Kyoto targets, should not be set in excess of need and should be consistent with the potential,

including technological potential, to reduce emissions. The UK is currently on course to meet its Kyoto target.

5.3.1.2 As part of the Climate Change Programme, the UK has also adopted an ambitious domestic target to reduce CO₂ emissions by 20% below 1990 levels by 2010. As set out in the Climate Change Programme Review (CCPR) published in March⁷, the cap will make a contribution to progress towards the UK target to reduce CO₂ emissions to 20% below 1990 levels by 2010. The CCPR indicated that with a contribution from the EU ETS the Government would achieve CO₂ emissions reductions in 2010 of 15-18% below 1990 levels. Following revision to projections, the progress towards the 2010 target which could now be made under each cap option is presented in Table 1 below.

Table 1	Option 1: No Cap	Option 2: 252MtCO ₂ (3.8MtC effort)	Option 3: 245MtCO ₂ (5.8MtC effort)	Option 4: 237MtCO ₂ (8MtC effort)
2010 CO ₂ reduction	11.3%	13.8%	14.9%	16.2%

5.3.1.4 In addition, the cap should be consistent with the Energy White Paper commitment to put the UK on a path to cut the CO₂ emissions by 60% by 2050, with real progress by 2020.

5.3.1.5 In December 2005, the European Commission published additional guidance on the preparation of NAPs. Whilst this guidance is not legally binding, it is 'persuasive' and indicates the Commission's intentions in assessing NAPs. The guidance states that the Phase I cap in each Member State should be taken as the starting point in setting a cap for Phase II.

5.3.1.6 Alongside these considerations, the competitive position of UK industry relative to the EU should be maintained, while minimising the impact of the EU ETS on the competitiveness of UK industry relative to industries outside the EU⁸.

5.3.2 Impact on Domestic Emission Reductions

5.3.2.1 The impact that the UK cap level has on domestic emissions depends on the extent to which it impacts the carbon price in the EU market. As noted in para 5.1, this will only affect the carbon price to the extent that the UK cap contributes to total number of EU allowances available. If the carbon price in the EU market is above the marginal abatement cost of UK firms, economic theory says that UK firms should then reduce emissions and sell their surplus

⁷ <http://www.defra.gov.uk/environment/climatechange/uk/ukccp/pdf/ukccp06-all.pdf>

⁸ For details of Phase II overall aims and objectives, see: <http://www.defra.gov.uk/environment/climatechange/trading/eu/phase2/index.htm>.

allowances. If the carbon price is below the marginal abatement cost, UK firms should then buy allowances rather than reducing their own emissions.

5.3.2.2 Table 2 below illustrates the projected estimated costs of emission reductions under different cap options, assuming a carbon price of €20. Column A sets out the current estimate⁹ of cost-effective domestic carbon abatement. This should take place broadly independently of the cap level set by the UK (except to the extent that the UK cap contributes to EU demand and therefore the carbon price). This projected emission reduction is estimated at 3MtC (11MtCO₂) annually although this estimate is uncertain and does not take into account other factors such as the impact of uncertainty on investment. For cap options requiring an effort level in excess of 3MtC (and an average carbon price of €20), UK firms are therefore expected to purchase some allowances to comply with the cap rather than undertaking abatement domestically. The estimates of these costs are presented in column C of Table 2. These costs will ultimately be dependent on the allowance price paid by the purchaser.

	Table 2	Option 1: No Cap	Option 2: 252MtCO ₂ (3.8MtC effort)	Option 3: 245MtCO ₂ (5.8MtC effort)	Option 4: 237MtCO ₂ (8MtC effort)
A	UK 2010 average CO ₂ emission reduction in MtC (MtCO ₂)	0	3 (11)	3 (11)	3 (11)
B	Average 2010 CO ₂ reduction outside the UK ¹⁰ in MtC (MtCO ₂)	0	0.8 (2.93)	2.8 (10.3)	5 (18)
C	Average 2010 cost of buying CO ₂ reduction from overseas (£m) ¹¹	0	£29.3m	£103m	£183m

5.3.2.3 The projected costs of buying allowances from overseas provide a dynamic incentive for UK firms to reduce their marginal cost of abatement which will increase the amount of cost-effective domestic abatement and consequently decrease the number of allowances that are purchased.

5.3.3 Impact of UK cap options on electricity prices

⁹ Based on Updated Energy Projections (UEP) for the Electricity Supply Industry (ESI) and analysis carried out by the consultancy firm Future Energy Solutions (FES) on abatement potential for non-ESI sectors.

¹⁰ That is bought by UK companies to fulfil their obligations under EU ETS

¹¹ Assumes €15 price and exchange rate of €1.5 = £1

5.3.3.1 The possible effect of the UK Phase II cap on electricity prices arises from any impact that UK effort may have on carbon prices (determined by the extent that to which UK cap contributes to total number of EU allowances available) and its impact on total number of allowances purchased. The uncertainty surrounding the modelling of carbon prices and electricity prices means that the estimates of impacts on electricity prices can be indicative only. The following table outlines the possible impact on electricity prices resulting from different levels of the UK Phase II cap. The baseline for these price impacts is the UK Phase I cap level (245m allowances) and therefore the impact of any cap set above this level (Options 1 and 2) would be predicted to have a downward impact on electricity prices in Phase II.

Table 3	Option 1: No Cap	Option 2: 252MtCO ₂ (3.8MtC effort)	Option 3: 245MtCO ₂ (5.8MtC effort)	Option 4: 237MtCO ₂ (8MtC effort)
Change in UK industrial electricity prices (against Phase I cap level)	Approx -20%	-1% (-3% - 0%)	0%	1% (0% - 3%)
Change in UK domestic electricity prices (against Phase I cap level)	Approx -10%	-0.5% (-1% - 0%)	0%	0.5% (0% - 1%)

5.3.3.2 Predicting all parameters is extremely difficult, and assumptions need to be reviewed as more information becomes available and as the Scheme evolves. To address the uncertainty, electricity price impacts have been estimated by running almost 300 scenarios to forecast possible carbon prices, assessing the possible carbon price impact as a result of introducing different UK effort levels to each of the scenarios, and then translating the carbon price change into an electricity price impact. The range of impacts estimated by the number of scenarios run is, as would be expected, very wide. To try and narrow down this range, a number of 'core' scenarios have been selected to identify a credible 'low' scenario and a credible 'high' scenario. These represent the range of impacts presented in Table 3.

5.3.4 Impact of EU ETS on electricity prices

5.3.4.1 Due to the overarching nature of this RIA, it is useful to include a discussion of the possible impacts of the overall EU ETS scheme on electricity prices.

5.3.4.2 The existence of the EU ETS has an impact on electricity prices in the UK as the carbon cost of electricity generation faced by generators is passed through to consumers as higher electricity prices. Electricity generators who burn fossil fuel (the majority) now have to take into account the price of

carbon, in the form of EU ETS allowances, when pricing electricity. In practice, what this means is that the cost of generating electricity will increase by the average cost of the carbon emitted in generating the marginal unit. The exact cost depends on the mix of fuels used but DTI estimate that for every increase of €1 in the carbon price, the *wholesale* price of electricity in the UK will increase by up to £0.45 per megawatt-hour. It should be noted that electricity prices have also risen recently due to the increase in the gas price, so isolating the exact effect of EU ETS is very difficult. Analysis suggests that the wholesale electricity price rose 72% between 2004 and 2005. Of this 72% rise, a 25% increase is estimated to reflect carbon costs, and the rest due to rising fuel costs.

5.3.4.3 It is believed that to date, any rise due to carbon in the *retail* price, which is what most electricity users actually pay, has been less. By the end of Phase I it is expected that a fuller level of pass-through into retail prices will have occurred, and in future it is expected that the rise in the retail price will eventually be the same as the rise that has already occurred in the wholesale price.

5.3.4.4 If a carbon price of around €15/tCO₂ continues and this is fully reflected in final prices, DTI and Defra have estimated that the electricity price rise attributable to the EU ETS would be around 20% for industrial and 10% for household consumers. These price impacts relate to the *existence* of a carbon price (i.e. purely the impact of the UK being covered by the scheme) and are therefore estimates of the possible increase, over time, relative to the time period before Phase I of the scheme started. They are not estimates of an increase from current electricity price levels and are independent of the Phase II cap decision.

5.3.4.5 In terms of the EU ETS increasing costs to industry, the indirect effect from higher power prices is likely to be more relevant than the direct effect of regulation. Table 4 highlights those sectors which are most affected by increased energy costs in terms of their energy intensity and market structure.

Table 4: Energy Intensity and Competitive Position of UK Industries

Increasing ability to pass through costs

High Energy Intensity	Competition Structure		
	Facing stronger competition from non-Kyoto (US, China, India) markets relative to other sectors	Competing in mainly EU markets relative to other sectors	Competing in mainly UK markets relative to other sectors
	Aluminium	Lime, plaster	Cement
	Pulp & paper	Iron & Steel	Bricks & construction products
	Chemicals	Hollow and Flat Glass	Primary rubber
	Man-made Fibres	Primary plastic	
	Mining of clays and kaolin		
Low Energy Intensity	Facing stronger competition from non-Kyoto (US, China, India) markets relative to other sectors	Competing in mainly EU markets relative to other sectors	Competing in mainly UK markets relative to other sectors
	Textiles, Leather & Clothing	Printing and publishing	Energy Supply Industry
	Ceramics	Wood & Wood Products	Food, Beverages & Tobacco
	Other Non-Metallic minerals	Other Glass	Other Oil & Gas
	Engineering and Vehicles	Rubber & Plastics	
	Non-Ferrous metals		
	Refining of petroleum products		
	Other Chemicals		
	Offshore oil & gas		

5.3.4.6 Table 5 shows the relative costs of electricity (for medium-sized users) as at March 2006 in key member states. It should be noted that power prices have been rising globally and not been restricted to Europe.

	INDUSTRIAL USERS MARCH 2006 PENCE PER KWH (INC TAXES)	DOMESTIC USERS MARCH 2006 PENCE PER KWH (INC TAXES)
UK	5.21	8.16
ITALY	7.99	14.45
SPAIN	3.71	7.85
FRANCE	3.8	8.33
GERMANY	5.97	12.65
N/LANDS	4.87	15.32
EU 15 MEDIAN	5.04	9.68

5.3.5 Impact on Windfall Profits

5.3.5.1 In Phase I, the power generation sector faced the full cut associated with the EU ETS. There is evidence that the generation sector has – at least partially - passed carbon costs on through higher electricity prices. To the extent that this pass-through exceeds the shortfall in allowances, there is a financial benefit for the sector. The analysis by IPA Energy Consulting Ltd¹² carried out for DTI estimates the potential for an increase in generator profit in Phase I of £800 million a year, based on the current annual allocation of 130MtCO₂, assuming full cost pass-through and a carbon price of €15. It should be noted however that this figure is dependent on assumptions used in the model and is subject to considerable uncertainty. DTI analysis indicates that even though there has been nearly full pass-through at the wholesale level, suppliers have not been passing the full costs of the EU ETS onto retail industrial and domestic customers. This analysis would therefore indicate that vertically integrated generators could be using some of their windfall profits to subsidise their retail customers, and so profits to the electricity sector as a whole would be significantly less than £800 million a year

5.3.6 Impact on security of supply

5.3.6.1 The overall size of the UK cap in Phase II of the EU ETS is a relevant factor in assessing the impact on security of supply in the period up to 2012 to the extent that it helps determine the number of free EU allowances that incumbent generators receive. This is because, other things being equal, awarding free allowances to generators boosts their profitability and might

¹² The IPA report can be found on these pages:
<http://www.dti.gov.uk/energy/environment/euets/phase1/page26230.html>

influence perceptions of the UK as a place to invest. However, analysis shows that the total level of allowances available to generators as a result of the options for the cap level being considered is unlikely to have any significant impact on generation capacity and therefore on security of supply (other decisions on EU ETS, for example, new entry and closure may have a more significant impact).

5.3.6.2 The impact of UK cap decisions on security of energy supply has also been looked at. Sensitivity analysis by consultants (IPA Energy Consulting Ltd) concluded that allocating to the generation sector at around 40% below BAU shows only marginal capacity and power price differences when compared to the allocation the generation sector received in Phase I (which was around 20% below BAU). Any impact on investment in new plant in this scenario would not therefore be expected to be significant. Assuming the generation sector takes the full 'cut' in Phase II, an effort level of 8MtC plus the removal of allowances to be auctioned would result in the generation sector being allocated at around 29% below BAU. The IPA analysis also found that allocating at around 40% below BAU would not be expected to increase the level of expected annual volume of unserved energy, when compared to the Phase I generation sector allocation. It is questionable, however, if the IPA report picks up genuine 'tipping points'. The report finds that lower allocations (at around 20% below and at 60% below) are associated with greater closures of coal generation plant, lower plant margin, and greater expected unserved electricity demand compared to allocation at BAU. In general, we can expect that the greater the allocation cut, the greater the pressure on economic viability of coal plant.

5.4 Summary of main considerations for each cap option

5.4.1 Each option carries similar costs and benefits, but their importance will vary with each option considered. The following paragraphs attempt to highlight the main considerations associated with each option.

5.4.2 Option 1 No cap limit

5.4.2.1 Following this option would not comply with the EU ETS Directive or Guidance. It would stunt progress towards the UK's Domestic target for CO₂ reduction as well as the Energy White Paper Commitment by failing to provide any emissions reductions from the traded sector. As illustrated in table 2, the costs to domestic businesses (in the absence of alternative measures) would be zero, allowing them to maintain their competitive position relative to firms outside of the EU ETS.

5.4.3 Option 2 Allocation of 252 MtCO₂ per annum

5.4.3.1 This option would require less effort from the traded sector than required in Phase I. Guidance suggests that the Commission may reject this option as it states that each Member State should take its Phase I cap as a starting point for Phase II. Also, analysis shows (see table 1) that pursuing this option would put the UK on a path to reducing emissions by 2010 by only

14% rather than the 20% target. Although costs to UK businesses is fairly low (see table 2), the dynamic incentives for investment in low-carbon technologies are limited, restricting any 'first-mover' advantage that the UK may have gained from this investment.

5.4.4 Option 3 Allocation of 245 MtCO₂ per annum

5.4.4.1 This option sets the Phase II cap equal to the current Phase I cap. It represents a possible cap level in between the two limits of the ranges consulted on (options 2 & 4) and reflects costs and benefits midway between the those discussed in option 2 & 4.

5.4.5 Option 4 Allocation of 238 MtCO₂ per annum

5.4.5.1 This represents the upper end of the effort range which appeared in the draft NAP for consultation published in March. It proposes a tighter cap than phase I, signalling the UK's long term commitment to the Scheme, being the only option that sets the UK on a path that falls within the range of 15-18% emission reduction below 1990 levels by 2010 as indicated by the CCPR (see 5.3.1.2). Costs to businesses will be higher (see table 4) and industrial electricity prices (relative to phase I) are likely to rise by 1% (see table 3) however the impacts on security of supply are likely to be minimal (see 5.3.6.2). Dynamic incentives to invest in low carbon technology will be maximised (relative to other options).

5.5 Administrative burden

5.5.1 An exercise to measure the administrative burdens our regulations place on industry was carried out last year (footnote). In terms of EU ETS, this looked at the administrative burden imposed by Phase I of the Scheme and covered installations in England and Wales only. The exercise focused on measuring the administrative costs rather than the policy costs. These are defined as "the [recurring] costs of administrative activities that businesses are required to conduct in order to comply with the information obligations that are imposed by central government regulations". The Phase I burden was estimated to be £175,000 for all 511 installations covered in Phase I in England and Wales.

5.5.2 For Phase II the administrative burden is estimated to be around £125,000. It should be noted however that this includes all installations covered by the Scheme including those in Scotland and Wales so this is not a direct comparison with the amount in Phase I. The estimate is lower because all installations including those that were opted out in Phase I already have GHG permits and are therefore not required to incur the administrative burden associated with purchasing these again in Phase II. There are a small number of new entrants, missing or late Phase I installations and some installations not previously in the scheme who have been affected by expansion and are now covered who will have to apply for GHG permits and therefore incur this administrative burden in Phase II. Small emitters who have opted out will have

to apply for exclusion in Phase II and therefore this is an additional burden imposed on them (albeit voluntary) but they will not then be subject to subsequent burdens associated with monitoring and reporting emissions. Other administrative costs relate to closures of sites, transfers of permits and applications to the NER. These are estimated to affect only a small number of installations. However all installations covered by the Scheme are still required to submit data relating to the monitoring and reporting of their emissions, as in Phase I.

6. SMALL FIRMS IMPACT TEST

6.1 A priority for the UK, other Member States and the Commission is to examine whether there is scope for legislative or administrative changes that could potentially reduce the burden on smaller operators, or eliminate smaller operators from the Scheme. The UK has been working closely with other Member States and the European Commission to discuss the potential for deregulatory options in Phase II.

6.2 Annex I of the EU ETS Directive (2003/87/EC) identifies the industry activities that fall within the scope of the Scheme, and requires that the “activities of a combustion installation with a thermal input capacity of more than 20MW” are included. As a result, a number of small installations fall within this activity threshold and concerns have been raised as to whether it is appropriate for such installations to be included when the financial and administrative burden are high in relation to their actual emissions. In this context, small installations are those that emit less than 25,000 tCO₂ per annum and therefore bear a disproportionate cost burden – as an indication of scale, more than 50% of the installations in Phase I emit less than 5% of the total emissions.

6.3 A related issue is that of a *de minimis* threshold for individual sources. The combustion plant threshold is 20MW, but the EU ETS Directive requires that this threshold may be achieved by *aggregating* all combustion activities from individual units (however small) on the same site to calculate the total installation capacity. As a result, installations with a number of small boilers (e.g. universities, hospitals, airports) have been included in the Scheme. In some cases, installations have 100-200 small combustion units on the site. This issue would be resolved by the application of the *de minimis* principle. For example, stand-alone units with a rated thermal input of less than 3MW could be exempted. In order to legally implement a *de minimis* rule, an amendment to Annex I the EU ETS Directive would be required. However, it is important to note that raising the overall threshold for combustion activity would also eliminate all small installations from the Scheme.

6.4 A range of options have been considered by Government, other Member States and the Commission, including possibilities to reduce the burden via administrative means (e.g. to reduce the stringency of monitoring and reporting requirements), or potential legislative options (e.g. to apply a *de minimis* threshold).

6.5 The Commission will not be amending the EU ETS Directive in time for Phase II. However, the European Commission is in the process of reviewing the Directive and the additional guidance, published on 4 January 2006, states that the Commission intends to consider the participation of the smallest installations at this time. This will include consideration of *de minimis* options to exclude combustion activities below a certain size threshold, such as up to 3MW, for the purposes of the aggregation rule. The Commission is examining the possibility to remove part of the aggregation rule itself that provides for the adding together of activity capacities that are operated by the same operator on the same site. A priority for the UK is to work closely with the Commission and other Member States during the review process.

6.6 A number of options are also being pursued to reduce monitoring and reporting burdens for all installations. The Commission Monitoring and Reporting Decision¹³ is currently being revised and has identified, as a priority, the need to consider the tiering of verification requirements related to emissions thresholds. In particular, the UK remains in favour of identifying the potential for lighter monitoring requirements for small installations.

6.7 At present, there are also separate cost considerations for small installations as a result of the aggregation rule. For example, at installations with a large number of unconnected small boilers spread across a site, emissions from each unit may need to be monitored separately. This need for individual monitoring can lead to high costs for such installations. In order to address some of these concerns, the UK has introduced a voluntary *de minimis* threshold of 3MW for Phase II, which will be used in the calculation of the aggregation rule. This has removed around 90 installations, who account for just 0.24 of total scheme emissions.

6.8 In addition, small combustion units are frequently added or shut down. When this happens, the operator needs to apply for a variation to its greenhouse gas emissions permit that costs £240 (although there is some scope for tiering this). These monitoring and reporting issues are currently being considered by the UK, Commission and other Members States. The Commission intends for revised guidelines to enter into force by 1 January 2008, coinciding with the start of the second trading period.

6.9 The UK has also revised its interpretation of the ceramics definition. The UK will be taking a more restrictive interpretation, so that installations are in the scheme if they meet all the relevant criteria set out in Annex 1. This more restrictive interpretation is expected to remove around 30 installations, representing 0.08% of total emissions within the scheme.

7. COMPETITION ASSESSMENT

7.1 The EU ETS is expected to affect UK business costs, potentially increasing costs of both energy and some non-energy inputs, as well as introducing the cost of buying allowances if required. An increase in electricity

¹³ See: http://europa.eu.int/eur-lex/pri/en/oj/dat/2004/l_059/l_05920040226en00010074.pdf

prices will lead to higher fuel input costs regardless of whether installations are covered by the Scheme. The proportionate increase in marginal costs will vary between sectors and potentially reduce firm profits (if additional costs cannot be passed through to prices), thereby impacting on the competitiveness of UK business as a whole.

7.2 Market structure, energy intensity, carbon intensity, pricing power and the position of competitors relative to UK firms are some of the key factors determining the extent to which UK firms can pass on any of the costs they may incur as a result of Phase II. In particular, the extent of international competition from firms within the EU and from firms outside the EU without Kyoto commitments will affect the ability of a domestic firm to pass through any additional costs. Some firms will be able to pass costs on to consumers in the form of higher product prices, while others will face international prices not affected by the EU ETS, and therefore will not be able to recover any of the additional costs associated with the EU ETS.

7.3 The diversity of UK firms, together with the numerous factors that influence competition, make a robust assessment of competitiveness implications for the UK economy as a whole difficult. Industries covered by the scheme have raised concerns about the impact of the EU ETS on electricity prices and the prices of raw materials (which may increase if the materials are produced by firms also covered by the Scheme and can pass any additional costs on to customers). Firms that produce energy intensive goods that are globally traded are the most susceptible to the impact of EU ETS related cost increases.

7.4 In general, the EU ETS is just one of many factors potentially affecting firm competitiveness. The existing literature on environmental regulation and competitiveness suggests that other factors may be equally important. A review of analysis to date indicates that the extent of any impact will vary depending on the sector or installation, and may be significant (positively or negatively) in some instances. Moreover, the allocation of allowances can affect profitability and investment decisions in the longer run.

7.5 Other RIAs consider the competitive impacts of specific policy options where relevant.

8. ENFORCEMENT, SANCTIONS AND MONITORING

8.1 IMPLEMENTATION AND COMPLIANCE COSTS

8.1.1 There are a number of costs which companies face in order to comply with the Scheme. The EU ETS Regulations 2005 set out various fees and charges that operators need to pay¹⁴. For example, in Phase I, an application for a permit must be accompanied by a fee (£1230 to £5490, depending on

¹⁴ See Schedule 5 to the Greenhouse Gas Emissions Trading Scheme Regulations 2005. Amendments to the fees and charges in the UK Regulations were consulted on in late 2004; see: <http://www.defra.gov.uk/corporate/consult/euets-regs2/index.htm>. RIAs providing further analysis of the impact of fees and charges are also available on these web pages.

the level of emissions at the installation) and changes to permits (such as variation, transfer and surrender) will also incur fees (£240, £240 and £620 respectively). An annual subsistence charge (£2,260 to £8,670) is also levied on operators in order to enable regulators to recover the costs incurred when exercising their functions under the Scheme. Fees also apply when making an application to the new entrant reserve (£1030) and additional fees can apply to the nomination or change of authorised representatives for registry accounts and verification organisations (£50).

8.1.2 These fees and charges have been developed in accordance with the polluter pays principle and principles of cost-recovery and cost reflectivity (i.e. the charges reflect the cost of regulator effort). For some of the tasks carried out by regulators, the effort required varies in proportion to the scale of emissions from the installation. A tiered approach to subsistence charges and permit application fees has therefore been adopted, whereby the charges are tiered according to the scale of emissions from the installation. This tiered approach is consistent with the cost-reflectivity principle.

8.2 MONITORING AND REPORTING

8.2.1 Installations are required to monitor and report annual emissions of CO₂ in accordance with a monitoring and reporting plan approved by the regulator. The costs of monitoring will depend on the scale and complexity of the installation, and the level of accuracy required by the Commission's Monitoring and Reporting (M&R) Decision and the installation's M&R Plan.

8.2.2 The M&R Guidelines require installations to use the highest, most accurate monitoring tiers unless it is not technically or economically feasible to do so. Therefore, each year, installations will need to consider how and whether they can improve the accuracy of their monitoring. Improving accuracy will incur costs, such as installing new gas meters, but will have the added benefit of more accurate reporting of emissions and hence the purchase or sale of allowances.

8.2.3 The Commission's M&R Decision is currently being revised, and the UK is working with other Member States and the Commission to consider options to reduce the administrative burden and financial costs to operators. As outlined below, the Commission intends for revised guidelines to enter into force by 1 January 2008, coinciding with the start of the second trading period.

8.3 FINANCIAL PENALTIES

8.3.1 Under the EU ETS, installations are allocated a total number of allowances for the commitment period. Member states must then allocate annual allowances to installations by 28 February each year, and ensure that by 30 April each year at the latest, the operator of each installation surrenders a number of allowances equal to the total emissions from that installation during the preceding calendar year. Installations will therefore have to surrender allowances for the first time by 30 April 2006 equal to their emissions during 2005.

8.3.2 If surplus emissions are not offset by buying allowances, which would be available at the market price, financial penalties will be levied on those that fail to meet their targets. Member States have discretion to apply penalties for more minor offences (e.g. breaching monitoring and reporting guidelines).

8.3.3 In Phase I (2005-2007), failure to surrender the correct number of allowances will result in a penalty of €40 per tonne. In Phase II, this cost will increase to €100 for each tonne of CO₂ for which no allowance is surrendered. Payment of the penalty does not remove the operator from the obligation to surrender allowances to cover those emissions.

9. IMPLEMENTATION AND DELIVERY PLAN

9.1 Phase II will commence on 1 January 2008. A National Allocation Plan was submitted to the Commission on 21 August 2006. On 29 November the Commission indicated that they accepted the majority of the UK's plans, subject to the submission of Gibraltar's NAP. The UK then submitted the final NAP to the Commission in time to meet the deadline of the 31 December. At the same time the list of installation level allocations was published for a final consultation period to give operators a final chance to check for errors in their calculations. The Final Allocation Decision which includes the list of installation level allocations will be notified to the Commission in February. Regulations for Phase II are being drafted and will come into force later this year (in time for the opening of the Phase II New Entrant Reserve). These will include a change in definition for the ceramics sector.

9.2 Implementation of the EU ETS is carried out by the Environment Agency in England and Wales, through Scottish Environment Protection Agency (SEPA) in Scotland and through Department of the Environment in Northern Ireland (DOENI). The Environment Agency (EA) lead on calculation of installation-level allocations for the UK for Phase II. SEPA, DOENI and DTI (offshore) are responsible for requesting and collecting data and verification opinions from installations within their remit.

9.3 Regulators are also responsible for checking submitted data and chasing missing data when required. The EA is responsible for collating data supplied by the other regulators and converting this into installation level allocations according to the instructions and methodologies provided by Defra.

10. POST IMPLEMENTATION REVIEW

10.1 The Commission is currently carrying out a Review of the EU Emissions Trading Scheme to improve the function and design of the Scheme post 2012. The Review will draw on the experience gained from Phase I of the Scheme.

10.2 The Commission's *Building a Global Carbon Market* Communication sets out the timetable for the Review of the EU Emissions Trading Scheme (ETS) as required by its Directive (2003/87/EC) as well as setting out priority areas

for investigation by the Commission¹⁵. These are: the scope of the Directive; further harmonisation and increased predictability; robust compliance enforcement and; linking with emissions trading schemes in third countries.

10.3 A multi-stakeholder working group will be set up later this year under the auspices of European Climate Change Programme (ECCP), and its work will focus on the priority areas highlighted above. This working group will be the Commission's primary vehicle for consulting on the Review, and the working group will submit its conclusions in the form of a report by 30 June 2007. That report will feed into a legislative proposal by the Commission in 2007, which will enable changes to the EU ETS to take place in 2013 after the end of Phase II (2008-12). In addition to the working group the Commission will welcome input from the High Level Group on Competitiveness, Energy, and the Environment, the LIFE- project, and other key stakeholders.

10.4 Under the scope of the directive, the Review will consider streamlining the application of the current scope with regard to combustion installations and the impact of the Scheme on small installations.

10.5 The UK Government considers the Review to be the best opportunity to map out a long term policy framework that provides clear signals about the EU ETS and strengthens the scheme. The priority areas for the Review announced by the Communication chime well with those articulated in the *Emissions Trading: UK Government Vision* document that was published alongside the Stern Review in October 2006.

10.6 In particular, the UK Government welcomes the Commission's intention that the working group consider:

- the cost effectiveness of covering small installations;
- expansion to other sectors and gases, including carbon, capture and storage;
- time horizons for setting the cap;
- the most appropriate process for setting the emissions cap;
- harmonised allocation methodology;
- the increased use of auctioning;
- benchmarking; and
- extending arrangements for linking to other schemes at national and regional level.

The UK Government is determined that the Review of the EU ETS should be ambitious. We are already working multilaterally with other Member States, Industry, Non-Governmental Organisations, the Commission, and other key stakeholders to analyse how the high level principles set out in the *Emissions Trading: UK Government Vision* can be translated into practical application in the real world, whilst always respecting the principles of better regulation.

¹⁵ http://ec.europa.eu/environment/climat/emission/pdf/com2006_676final_en.pdf

Landscape review of climate change instruments

10.7 Defra will be carrying out a review of the main business-facing instruments tackling climate change emissions (EU ETS, domestic trading schemes such as the proposed Energy Performance Commitment, and Climate Change Agreements), with a view to securing improvements in simplicity, and in the regulatory and administrative burden caused by overlaps. The review will report in 2007.

11. SUMMARY AND RECOMMENDATIONS

11.1 The costs and benefits of each of the options have been considered under the main impacts:

- Impact on national and international objectives and guidelines
- Impact on domestic emissions reductions
- Impact of the cap on electricity prices
- Impact of the EU ETS on electricity prices
- Impact on windfall profits
- Impact on security of supply

11.2 Taking all of these into account, this RIA recommends option 4.¹⁶

12. DECLARATION

12.1 I have read the regulatory impact assessment and I am satisfied that the benefits justify the costs.

Signed

Date

**IAN PEARSON, MINISTER OF STATE
DEPARTMENT FOR ENVIRONMENT FOOD AND RURAL AFFAIRS**

¹⁶ Option 4 was approved by the EE Committee in June 2006