

# EU EMISSIONS TRADING SCHEME (EU ETS) PHASE II (2008-2012)

## POTENTIAL EXPANSION OF THE SCHEME

### Full Regulatory Impact Assessment

February 2007

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## **1. TITLE OF PROPOSAL**

1.1 This Regulatory Impact Assessment (RIA) sets out options for proposed changes to the scope of the EU Emissions Trading Scheme (the "Scheme") for the Phase II.

## **2. PURPOSE AND INTENDED EFFECT**

### **2.1 Key Objectives**

2.1.1 The Government's main 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
- Look at the scope to include further CO<sub>2</sub> from existing sectors.
- Reduce the burden on small emitters

2.1.2 In particular regarding Phase I, distortions arose where:

- Some activities and installations were included in the UK National Allocation Plan (NAP) whilst direct competitors were not. For example, emissions from the manufacture of fibre glass insulation were included, whilst rock wool insulation was not.
- Member States implemented the Scheme differentially. Thirteen states adopted a broad interpretation of combustion installation (including all combustion units) whereas the UK and others adopted a more limited interpretation where combustion units designed for energy production only were included. The UK, Member States and the European Commission are therefore keen to work towards greater consistency of coverage and harmonisation in Phase II.

2.1.2 In addition to the main aims, the specific aims of expansion were:

- To ensure that any expansion of scope in the UK for Phase II is pragmatic in approach and covers major sources of CO<sub>2</sub> whilst excluding small emitters where the costs of participation could be disproportionately higher.
- To examine the potential for simplification measures and to address problems that had arisen in applying Monitoring, Reporting and Verification Guidance. For example, the exclusion of certain processes in the glass industry required additional sub-metering and therefore additional expense.

## 2.2 Constraints

2.2.1 The EU ETS Directive (2003/87/EC) stated that there could be no 'opt outs' for Phase II<sup>1</sup>, meaning that it is not possible to exclude installations that are covered by the Directive. Increased harmonisation across the EU25 could therefore only be achieved through expanding coverage in Member States, including the UK, who have adopted a more limited interpretation of the Directive in Phase I (this is explained further in paragraph 2.3.2 below). It has therefore been important to ensure that any expansion could be agreed with other key Member States where industries are in direct competition with UK industries.

2.2.2 Member States that had adopted a broad definition for Phase I wanted this definition enforced across all Member States in Phase II. The Commission has stated that it considers that a broad definition is correct.

2.2.3 The Commission have issued further Guidance on the preparation of NAPs for Phase II, clarifying the Directive and earlier Guidance. This sets out which activities should be included by all Member States during Phase II. Whilst the Guidance is not legally binding, it has 'persuasive authority' and provides a basis for increased harmonisation in Phase II.

2.2.4 The UK, in collaboration with France and the Netherlands, has developed definitions of these expansion sectors that limit the impact on small installations and competitiveness. Other Member States have broadly accepted these definitions. These have been recorded in official Climate Change Committee<sup>2</sup> minutes as the basis on which the Commission will enforce the Guidance on the definition of a combustion installation.

## 2.3 Background

2.3.1 The activities covered in Phase I of the Scheme are listed in Annex I of Directive 2003/87/EC<sup>3</sup>, and in summary include emissions of CO<sub>2</sub> from:

- Energy activities (Combustion installations [input >20MW], mineral oil refineries, coke ovens)
- Ferrous metals (Metal ore, Iron and Steel [>2.5 tonnes per hour])
- Mineral industry (Cement [>500 tonnes per day], Lime [>50 tonnes per day], Glass [>20 tonnes per day], Ceramic products [>75 tonnes per day])
- Other activities (Pulp and paper [>20 tonnes per day]).

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<sup>1</sup> The Directive allows for certain installations that are covered by the EU ETS to stay out of the Scheme for Phase I. This is conditional on those installations being subject to national climate change policies that result in equivalent emissions reductions. In the UK, some CCA and UK ETS participants have 'opted-out' and have therefore temporarily been excluded from the EU ETS.

<sup>2</sup> The Climate Change Committee consists of representatives from Member States and is chaired by the Commission.

<sup>3</sup> See: <http://www.defra.gov.uk/environment/climatechange/trading/eu/info/directive.htm#directive>

2.3.2 In Phase I, a range of interpretations of the definition of “combustion installation”, and therefore the combustion processes included within the Scheme, were taken by Member States. These were termed narrow, medium and broad referring to the level of inclusion of activities<sup>4</sup>. In its decisions on Phase I NAPs, the Commission rejected the use of the narrow definition but accepted both the medium and broader definitions. The UK followed a “medium” approach, defining a combustion installation as a stationary technical unit that burns fuel for the production of an energy product (which could be electricity, heat or mechanical power). Around half of all Member States interpreted the term more broadly (e.g. the Dutch and Danish NAPs), including all combustion units, whether designed specifically for energy production or not. These inconsistent interpretations have led to competitive distortions in certain sectors. Member States and the Commission have therefore recognised the need for more consistency in Phase II.

2.3.3 The EU ETS Directive expressly allows for individual Member States to extend the scope of the Scheme beyond the activities and gases currently defined in the Directive in Phase II and future phases. Defra commissioned consultancy research in April 2005 to provide a preliminary assessment of the options, feasibility and impacts of expansion<sup>5</sup>. Following this initial work and internal analysis, the July 2005 consultation document<sup>6</sup> proposed expansion to additional sectors and further CO<sub>2</sub> emissions from existing trading sectors in order to reduce the competitive distortions within UK industrial sectors and to deepen the coverage of the Scheme to include further emissions from large industrial emitters.

2.3.4 The Commission published revised NAP Guidance in December 2005<sup>7</sup>. This aims to reduce many of the disparities resulting from inconsistent implementation of Phase I across the EU25 and, by requesting more detailed and consistent information, will allow a more transparent and robust assessment of Member States’ NAPs.

2.3.5 The Guidance stipulates that a broad definition of combustion installation is correct. However, the Commission indicates that it will take a pragmatic approach to enforcement, provided that Member States include the sectors and activities specifically listed in the Guidance. These sectors are broadly in line with the UK’s July 2005 consultation document, with the exception of carbon black. Paragraph 36 of the Guidance states that the Commission:

“understands that some Member States would have to include a number of additional installations, including large installations with significant emissions as well as some of the smallest emitters. However...the Commission recognises that it is not useful to include

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<sup>4</sup> Please see Ecofys Interim Report on National Allocation Plans, Matrix 5, available from: [http://www.ecofys.co.uk/uk/publications/reports\\_books.htm](http://www.ecofys.co.uk/uk/publications/reports_books.htm);

<sup>5</sup> The ‘Initial review of potential expansion of the UK Phase II NAP to additional CO<sub>2</sub> sources’ by Entec and Nera is available on the Phase II pages of the Defra website: <http://www.defra.gov.uk/corporate/consult/euets-phasetwo/co2-sources.pdf>.

<sup>6</sup> See: <http://www.defra.gov.uk/corporate/consult/euets-phasetwo/index.htm>.

<sup>7</sup> Available from: [http://europa.eu.int/comm/environment/climat/pdf/nap\\_2\\_Guidance\\_en.pdf](http://europa.eu.int/comm/environment/climat/pdf/nap_2_Guidance_en.pdf).

additional combustion processes which are typically carried out by small installations. In order to remove these inconsistencies in the second trading period, all Member States should therefore in any case include combustion processes involving **crackers, carbon black, flaring (including offshore), furnaces (including rock wool) and integrated steelworks (including rolling mills, re-heaters, annealing furnaces and pickling)**, typically carried out in larger installations causing considerable emissions. The Commission reserves the right to take all necessary measures to avoid significant distortions”.

2.3.6 It is important to note that, whilst the Commission Guidance is not legally binding, it has “persuasive authority” and will be taken into account by the Courts in interpreting the Directive. A court would be most likely to decide in favour of the Commission’s interpretation stated in the Guidance. The Guidance is also a statement of intent by the Commission, and gives an indication of the risk of being challenged by the Commission in the event of adopting particular interpretations.

2.3.7 Not implementing the Commission’s Guidance increases the risk of liability for damages in the event of operators - or others - suffering financial loss as a result of a Member State implementing in a manner which is found to be unlawful. The Commission has stated its intention to enforce the Guidance on the basis of the definitions of sectors developed by the UK, France and the Netherlands. These definitions are framed to minimise the impact on small installations and competitiveness.

### **3. Consultation**

3.1 The July 2005 consultation document issued by the Government and Devolved Administrations on the Phase II outlined the Government’s initial proposal for expansion to additional CO<sub>2</sub> emissions from new and existing sectors and invited formal written responses over a 12 week period. Alongside this process, individual focused sector meetings were held with industry associations to ensure that their views on expansion were taken into account. Following the publication of the Commission’s further Guidance on the preparation of NAPs, carbon black installations have also been informally consulted.

3.2 The draft NAP, detailing proposed expansion sectors was published for consultation alongside the March partial Expansion RIA<sup>8</sup>, and gave all EU ETS sectors and interested parties a further opportunity to comment. A formal Government response to the July consultation accompanied the March document, outlining the way in which the consideration of responses has informed the development of expansion options, and reflect that consideration has been given to the impact of expansion on administrative and monitoring burdens and small installations.

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<sup>8</sup> See <http://www.defra.gov.uk/corporate/consult/euets-phasetwo-nap/ria-expansion.pdf>

3.3 The overarching full RIA for EU ETS Phase II outlines the consultation programme in more detail.

#### 4. OPTIONS

|                 |  |
|-----------------|--|
| <u>Option 1</u> | <u>No change from Phase I installations (Do Nothing Option)</u>  |
| <u>Option 2</u> | <u>Phase I installations plus sectors the UK has already agreed to expand to (as announced in November 2005)</u> |
| <u>Option 3</u> | <u>Follow Commission Guidance and address anomalies within the UK</u>  |
| <u>Option 4</u> | <u>Move to a broad definition of 'combustion installation'</u>   |

4.1 The four key options identified for expanding the scope of the EU ETS in Phase II are described below:

- Option 1: Phase I installations only: no expansion in Phase II (Do Nothing Option).
- Option 2: Phase I installations plus some activities in sectors that have been identified by independent consultants and internal analysis as suitable sources for expansion.<sup>9</sup> This approach would broaden coverage of the Scheme to the following additional sources of CO<sub>2</sub>: glass, gypsum, rock wool, and flaring from offshore oil and gas production. Installations in the glass sector already have a proportion of their emissions covered by the EU ETS in Phase I. Expansion under this option would increase emissions coverage in Phase II by approximately 5.2MtCO<sub>2</sub><sup>10</sup>.
- Option 3: Phase I installations plus the sectors listed in the further Commission Guidance on the preparation of NAPs, plus gypsum. This approach would expand the Scheme to all the sectors in Option 2 plus additional emissions from integrated steelworks, petrochemicals crackers and carbon black. The expansion would cover a total of around 9MtCO<sub>2</sub><sup>11</sup>. The Commission has stated that this is the minimum basis for scope on which it will assess NAPs.
- Option 4: This option would involve moving to a 'broad' definition and would include many of the identified sources in Options 2 and 3, but would also include additional activities such as dryers, reactors, space heaters, furnaces. Research<sup>12</sup> indicates that this would impact on 190 new installations but increase emissions currently covered by the Scheme by around only 11MtCO<sub>2</sub>. Additional activities at 230-460 existing installations are also predicted to be affected. Thirteen Member

<sup>9</sup> Following consultancy work and stakeholder consultation the Government announced some early expansion decisions on 24 November 2005.

<sup>10</sup> 2003 emissions

<sup>11</sup> 9MtCO<sub>2</sub> is 2003 actual emissions. Emissions from expansion are projected to be 9.5MtCO<sub>2</sub> in 2010.

<sup>12</sup> "Definition of Combustion Installation" (Entec 2005) available on the Defra website at <http://www.defra.gov.uk/environment/climatechange/trading/eu/phase2/index.htm#research>

States adopted this approach in Phase I, and the further Guidance from the Commission states that a broad definition is “correct”. However, the Commission intend to take a “pragmatic approach” to enforcement as this option may bring in many smaller operators.

4.2 With the exception of carbon black a number of sector specific consultancy projects were commissioned to fully examine the costs and benefits of expansion to the identified sectors<sup>13</sup>. This research has included consideration of:

- quantity of emissions, and number and size of installations;
- abatement potential and costs for all covered activities
- feasibility and costs of monitoring (e.g. metering), reporting and verification;
- implications for competitiveness (both within the EU and internationally);
- feasibility of allocation / sector definition issues;
- interaction with existing regulations;
- signals and views from other Member States;
- relationship with the definition of “combustion installation”.
- the options for allocation methodology.

## **5. BENEFITS AND COSTS**

### **5.1 Option 1: No change from Phase I installations (Do Nothing Option)**

5.1.1 Under this option the UK would not follow the Commission’s Guidance and would maintain the current “medium” interpretation of combustion installation as applied in Phase I. This approach would not address the key objectives to minimise competitive distortions, capture further major sources of CO<sub>2</sub> and to address monitoring concerns in the glass sector. No additional installations would be brought into the Scheme and emissions coverage would be unchanged from Phase I.

#### *Benefits*

5.1.2 There would be no additional costs to Government of administering the Scheme to additional sectors and no further set-up costs for installations currently outside the Scheme. EU ETS participation costs for installations are predicted to vary depending on the level of emissions. A break-down of the estimated costs of participation are set out in Annex B to this RIA. The approximate total cost for smaller emitters (<50KtCO<sub>2</sub>) is estimated to be £32,000 over Phase II, for medium emitters (50-500KtCO<sub>2</sub>) £44,000 and for larger emitters (>500KtCO<sub>2</sub>) £67,000.

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<sup>13</sup> Please see Annex C for further details of all expansion consultancy reports.

5.1.3 Additionally, this option would allow more time for extensive research on sectors and further consultation with sectors for future expansion. Installations opposed to Phase II inclusion would be satisfied.

#### *Costs*

5.1.4 The Commission is highly likely to reject the NAP on the basis that the Commission Guidance has not been followed. This is potentially therefore a very significant cost which carries high risk and may lead to:

- legal infraction proceedings against the UK and loss of reputation;
- inability to allocate allowances to UK operators and lack of certainty for business;
- need for all operators in expansion sectors to urgently supply data and consider set-up costs.

5.1.5 The UK Government announced its intention (in November 2005) to include additional emissions from glass, rock wool, gypsum and flaring from offshore oil and gas production following consultancy analysis and consultation with sectors. Proceeding with this option would therefore not be consistent with this previous announcement.

5.1.6 Expanding the Scheme to cover additional sources of emissions could potentially introduce further abatement opportunities, which could be used to meet the Phase II cap.

5.1.7 In addition, competitive distortions arising from Phase I would not be addressed in any way. For example, the rock wool industry (2 installations) manufactures insulation material from rock and within the UK, this sector generally forms part of the larger 'Mineral Wool' sector with the glass fibre insulation industry. The rest of the Mineral Wool sector is already covered in Phase I through the inclusion of the glass fibre insulation industry (classified in the glass sector in Phase I) but rock wool has not been included. Both Government and the sector are keen to include rock wool installations so that glass fibre and rock wool can be treated equally and competitive distortions eliminated.

5.1.8 There would be no opportunity to address the monitoring (metering) and reporting costs for the glass sector. The current application of the EU ETS covers 30 installations in the glass sector and requires the monitoring and reporting of combustion and process emissions of the main glass melting activities, which account for more than 90% of the site emissions (mainly in furnaces) and approximately 1.9MtCO<sub>2</sub>. This leaves a range of downstream activities, such as forming and coating, that are not currently covered representing a small amount of combustion emissions. However, the exclusion of these emissions has led to considerable sub-metering and monitoring costs to separate emissions from covered and non-covered units. Any reduction in monitoring, reporting and verification costs as a result of expansion of coverage (reducing sub-metering) would be beneficial and the sector is positive about expansion, but such simplification measures cannot be implemented under this option.



## 5.2 Option 2 Phase I installations plus sectors the UK has already agreed to expand to (as announced in November 2005)

5.2.1 This approach would involve broadening coverage from Phase I to include activities in specific sectors that the UK has identified as suitable sources for expansion following consultancy analysis. When assessing the feasibility and impact of inclusion, independent consultants followed the criteria listed in paragraph 4.2, which includes consideration of the size of installations and potential costs of monitoring and reporting. The sectors included under this option are glass, gypsum, rock wool and flaring from offshore oil and gas production. This would bring 12 new sites (10 gypsum and 2 rock wool installations) into the EU ETS, as well as affecting 140 existing sites (110 offshore flaring sites and 30 glass installations). However, this option is not compliant with the further Commission Guidance, and therefore attracts the risks noted in paragraphs 2.3.6 and 2.3.7.

5.2.2 The July 2005 consultation on Phase II proposed the inclusion of the above sectors, and operators have also been directly consulted regarding possible inclusion in Phase II.

### *Benefits*

5.2.3 Additional emissions equivalent to approximately 5.2MtCO<sub>2</sub> per year would be brought into the Scheme. Expanding the coverage of the Scheme provides economic incentives to reduce emissions to more emitters across the economy. The abatement options available to meet the cap will be increased<sup>14</sup>, improving the flexibility and efficiency of the Scheme<sup>15</sup>.

5.2.4 Some activities at glass installations are already included in Phase I and expanding to include activities not currently covered would make monitoring, reporting and verification (MRV) of emissions at these sites simpler. The need for sub-metering would be reduced, (potentially significantly) reducing the overall costs associated with MRV and the administrative burden to this sector. This approach reflects the views of the glass sector in their responses to the July 2005 consultation.

5.2.5 Phase II baseline data for the installations affected under this option has been collected alongside data for all sites included in Phase I and there are therefore no outstanding additional costs for the authority preparing the allocation.

5.2.6 The majority of expansion activities under this option were already included by other Member States in Phase I so harmonisation of scope across

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<sup>14</sup> Options for incremental abatement of emissions and step-change reductions have been identified for offshore flaring activities. Analysis suggests that abatement opportunities are more limited in the glass, gypsum and rock wool sectors.

<sup>15</sup> Insufficient data exists to quantify this benefit (industry specific abatement costs are often not generally available outside industry) but increasing scope should increase the probability that overall emissions reductions will occur where the cost of reduction is lowest.

the EU would improve, reducing any competitive distortions which may have arisen.

## Costs

5.2.7 There would be a high risk that Commission rejects the NAP because carbon black, petrochemical crackers and downstream processes on integrated steelworks are excluded. The Commission may then impose a 'broad' interpretation if pushed to use legal arguments. The potentially high costs associated with the NAP being rejected by the Commission were set out in more detail in 5.1.4 above. It is considered to be legally more difficult to defend a position midway between medium and broad which does not include all the activities listed in the Commission's Guidance.

5.2.8 The 12 new sites (gypsum and rock wool) brought in would incur direct costs of participation<sup>16</sup>, which vary according to the size of an installation and its level of emissions. In addition, expansion to offshore flaring is expected to lead to increased MRV costs at affected sites. Estimates of set-up and participation costs for the sectors included under this option are as follows:

- Gypsum - Gypsum based construction products include plasterboard, gypsum blocks and tiles and it is also an essential ingredient in cement production where it is used as a retarding agent. The demand for plasterboard in particular is increasing at a higher rate than general building industry growth. Seven gypsum plants (owned by 3 major companies) are covered by Climate Change Agreements (CCAs), and for these installations EU ETS participation should not impose significant additional costs (estimated to be around £5k per site annually). For the three gypsum sites not currently covered by CCAs, costs have been estimated to be a little higher, around £7-£14k per year.<sup>17</sup>
- Rock Wool - Emissions data is easily obtainable from the rock wool sector as the main processes are already sub-metered as part of the control systems in place for other purposes (e.g. Climate Change Agreements). Costs to rock wool installations of participating in the EU ETS are estimated to be, on average, around £7k per year.
- Flaring - The costs of including flaring activities from offshore oil and gas production in Phase II are somewhat harder to estimate as they depend on the level of accuracy of monitoring and reporting that is likely to be required<sup>18</sup>. Accurate meters can monitor flare emissions

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<sup>16</sup> Direct costs to EUETS installations include a one-off permit application fee, collection and verification of baseline data, costs of monitoring, reporting and verification requirements and a subsistence payment to the Regulator.

<sup>17</sup> Cost estimates are set out in Expansion sector specific analysis: Glass, Gypsum and Rockwool, FES (AEAT). See Annex C for link to full report.

<sup>18</sup> Current MRV guidelines are not well suited for monitoring and reporting flare emissions, and it is expected that revised guidelines to be published in 2006 will address this and simplify the requirements where possible.

and costs of installing such meters vary from £20-£100k depending on site specific factors<sup>19</sup>.

5.2.9 Another potential cost is the possibility that some sectors may appeal their inclusion if some of those listed in the Guidance are selected while others are not.

### 5.3 Option 3 Follow Commission Guidance and address anomalies within the UK

5.3.1 The Commission clearly states that the scope of the Scheme should be as broad as is possible under current legal definitions. A broad definition would involve significant expansion of the Scheme (see Option 4), including to sectors that our analysis indicates would bring in a number of smaller operators. However, the Commission indicates that it will also take a “pragmatic approach” to enforcement, provided that Member States include all of the sectors and activities specifically listed in the Guidance.

5.3.2 The listed activities are combustion processes involving crackers at petrochemicals sites, carbon black, flaring (including offshore), furnaces (including rock wool) and integrated steelworks (including rolling mills, reheaters, annealing furnaces and pickling). Expansion to integrated steelworks and crackers would not include any additional sites but would bring in additional activities at installations already covered in Phase I. Expansion to carbon black would bring an additional 2 sites into the EU ETS for Phase II.

5.3.3 Although not listed in the Commission Guidance, the UK also considers gypsum and glass appropriate for expansion in Phase II (as set out under the previous option) and therefore additional emissions from these sectors would also be included under this option.

5.3.4 The UK Government has worked closely with other key Member States, notably France, the Netherlands and Germany, to develop harmonised definitions of the activities listed in the Guidance and these are considered workable across Member States<sup>20</sup>. The Commission has stated that this is the minimum basis against which it will assess NAPs for compliance with the Guidance. Therefore a more “level playing field” for industry will be achieved through this option, though there has been a different interpretation of Carbon Black scope between ourselves and the Dutch.

5.3.5 The benefits and costs are summarised below. As this option also includes all activities listed under Option 2, these benefits and costs are additional to those already set out under the previous option.

#### *Benefits*

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<sup>19</sup> See paragraph 39 of the Executive Summary and Section 6 of the Offshore Flaring study by ERM (link to full report can be found in Annex C).

<sup>20</sup> <http://www.defra.gov.uk/environment/climatechange/trading/eu/pdf/expansion-explain.pdf>

5.3.6 This option carries a low risk of the NAP being rejected by the Commission. As already mentioned above, the UK, in collaboration with France and the Netherlands, has developed definitions for the activities listed in the Commission Guidance and therefore expanding UK coverage of the Scheme in line with these definitions should limit the impact on small installations and competitiveness, and improve harmonisation across the EU. Under this option, the Guidance can be used as a clear legal justification for expansion.

5.3.7 In addition to the 5.2MtCO<sub>2</sub> included under the previous option, an additional 3.7MtCO<sub>2</sub> per year would be brought into the Scheme under this option, increasing the coverage of the Scheme to around 9MtCO<sub>2</sub> in total. Further expanding the coverage of the Scheme provides additional economic incentives to reduce emissions across the economy. The abatement options available to meet the cap will be further increased, improving the flexibility and efficiency of the Scheme.

### Costs

5.3.8 The risk that the Commission may reject the NAP (unless the UK moves to a broad definition) remains<sup>21</sup>, but is considered to be much lower than under the previous two options. There is also the potential risk of legal challenge from operators or NGOs if we do not move fully to a broad definition<sup>22</sup>.

5.3.9 Other major Member States may interpret Guidance differently and not include same sources. However, the Commission is likely to reject NAPs that do not comply with Guidance. The definitions for sectors listed in the Guidance have now been recorded in the official Climate Change Committee minutes as the basis on which the Commission will enforce the Guidance on combustion installation in Phase II.

5.3.10 Estimates of set-up and participation costs for the sectors included under this option are as follows<sup>23</sup>:

- Integrated Steel - It is difficult to determine whether MRV costs for integrated steel sites are likely to rise or fall if additional activities are included in Phase II<sup>24</sup>. If, where sub-metering was required in Phase I, one global emissions figure can be provided in Phase II, it is likely that costs will be reduced. However, if MRV continues to be carried out as a series of separate operations that are summed for the site, costs of

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<sup>21</sup> This is considered a low risk. While the Guidance states that the broad definition is correct, the UK has consistently argued that this would impact on a large number of small installations. This lobbying strategy has fed into the Commission Guidance, which takes a pragmatic approach to enforcement.

<sup>22</sup> This is considered low risk as operators would have nothing to gain, and NGOs have not expressed concern with an approach that includes large emitters.

<sup>23</sup> The costs to Gypsum, Rockwool and Flaring are set out in Option 2.

<sup>24</sup> In response to the March 2006 consultation on the draft NAP and the accompanying RIAs, the steel industry indicated that they believed expansion at the sites affected under this option would lead to increased MRV costs.

compliance will increase, although some simplification may be possible within the metering regime.

- Petrochemical crackers - Many petrochemical sites which could be brought in via expansion are already covered by the EU ETS to some degree and most of those not covered are subject to the (less stringent) MRV requirements of CCAs. Approximate estimates of up-front costs are in the range £0.2-£1.25m<sup>25</sup>. Annual running costs are likely to be around 10% of the up-front costs and verification costs are estimated to be less than £10,000 per year for most sites.

5.3.11 Government has not carried out feasibility analysis or the same level of industry consultation on inclusion of carbon black. However, since publication of the Commission Guidance in January 2006, the UK Government has met with relevant stakeholders (both the industry association and the installations affected) to explain the implications of carbon black inclusion.

#### 5.4 Option 4: Move to a broad definition of 'combustion installation'

5.4.1 This option involves adopting a broad interpretation of combustion installation to be certain that we are complying with the Commission's interpretation. However, we have consistently argued that a broad definition would not be pragmatic or desirable, as this would bring in a large number of small emitters and sectors that would face major competition impacts from outside the EU.

5.4.2 A study carried out by independent consultants<sup>26</sup> indicated that 190 new installations could be brought into the Scheme under a broad definition, and between 230 to 460 existing installations would have additional activities covered. The majority of the additional installations would be relatively small, falling between a 20MW and 35MW capacity threshold.

#### *Benefits*

5.4.3 This option carries the lowest risk of the NAP being rejected by the Commission. It would strictly follow the Commission's Guidance which states that a broad interpretation is "correct" and therefore provide clear justification for bringing in new sources.

5.4.4 This option is also most likely to lead to greater harmonisation across EU25 and reduced competition issues and competitive distortions, although this would be dependent on all other Member States also adopting a broad definition for Phase II.

5.4.5 Moving to a broad definition would mean additional installations which emit around 11MtCO<sub>2</sub> each year would be included in EU ETS. A broad definition would also cover emissions from additional activities at installations

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<sup>25</sup> The higher end of the range would only potentially apply to the largest and most complex sites.

<sup>26</sup> Definition of combustion installation: Entec December 2005.

which are currently part of Phase I but no quantitative estimate of the likely total of these uncovered emissions is currently available.

## Costs

5.4.6 Many small installations would be included under this option, at a potentially significant cost to those industries affected and with little environmental benefit.

5.4.7 There would be serious delays to the timetable (adding between 3-6 months), with subsequent impact on all other work as well as the resources required by the Environment Agency, and the administrative burden on industry. New installations and sources would need to be identified, additional data requested and consultation with the new sectors would need to take place. In addition, revisions to projections, sector classification, sector caps, allocation methodology, new entrant reserve quantification and any necessary amendments to monitoring and reporting guidelines would be required.

5.4.8 Additional information for 190 installations would need to be collected (on a site-by-site basis) and no provision currently exists to do this.

5.4.9 No precise cost estimates to installations of expanding to a broad definition are available but a likely total for permit, MRV and subsistence costs for all additional installations not currently covered by Phase I would most probably be in the region of £5-£10k. This cost range does not include costs to the relevant central authority of collecting the additional data or modifying its allocation methodology. There would also be some costs to existing Phase I installations where activities at these installations not included in Phase I are captured under a broad definition.

5.4.10 This option carries a risk of legal challenge from operators, given that we took a medium interpretation in Phase I, although clarification in the Guidance would help the UK's case.

## 6. SMALL FIRMS' IMPACT TEST

6.1 In the development of expansion policy options, one of the key considerations has been the impact on small installations and operators<sup>27</sup>. The Government commissioned independent research to examine the options for expansion and the number and size of installations and abatement potential was considered. Definitions for new sectors have been devised for each sector with appropriate thresholds to ensure that small installations are not included where at all possible. Sectors have been consulted and involved throughout this process.

6.2 Please see the overarching full RIA for further details about potential impact on smaller emitters.

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<sup>27</sup> As the overarching full RIA clarifies, this refers to low emitters rather than small *firms*.

## 7. COMPETITION ASSESSMENT

7.1 Maintaining Phase I coverage would not address the competitive distortions that have arisen across the EU as a result of different interpretations of 'combustion installation'. For example, the Netherlands was one of the Member States who adopted a broad definition of 'combustion installation' in Phase I. The Dutch NAP therefore covered installations and activities not included in the UK, potentially distorting competition between some Dutch and UK installations. Persuading other Member States to adopt the UK "medium" interpretation is not considered a viable option in light of the number (thirteen) of Member States that have adopted a broad interpretation in Phase I and the further Commission Guidance which clearly states the Commission's intention to move towards broader coverage. It would also not address the competitive distortions that arose within the UK (for example, where glass fibre production was included whilst its substitute product, rock wool, was not.)

7.2 Expanding to include other significant emitters which are also likely to be included by other Member States will reduce competitive distortions across the EU. However, if the installations included compete internationally outside the EU, expansion in Phase II may reduce the competitiveness of such installations across the EU. A competition assessment for each of the activities being considered for inclusion in the EU ETS under each of the options discussed is set out below.

7.3 Expansion to the glass sector is likely to reduce costs for the UK glass industry. In addition, given that some other Member States have already included whole sites in Phase I, extending coverage in the UK would help to remove a competitive distortion across the EU.

7.4 Gypsum manufacturers are all international companies but the high transport costs associated with gypsum products (which are essentially heavy, low value goods) means the only significant competition is within the UK. In terms of potential competition distortions within the UK, some of the uses of gypsum are similar to uses of lime and cement, which are covered by the EU ETS. In Phase I gypsum was included in a number of other Member States, (for example the Netherlands, Denmark and Ireland). The inclusion of gypsum in Phase II therefore supports the UK and the Commission's objective of addressing distortions and achieving greater harmonisation in Phase II.

7.5 Phase I of the EU ETS covered glass fibre plants in the UK mineral wool insulation industry but did not extend to rock wool, thereby creating a competitive distortion within the industry in the UK. Expansion to include rock wool in Phase II would remove this distortion. International competition in this market is limited (due to high transport costs associated with transporting a high volume product) and competitiveness issues are not therefore thought to be significant.

7.6 A comprehensive analysis of the possible competitiveness impacts of expanding the EU ETS to flaring is not available due to the timeframe of the consultancy work commissioned on this sector. However, initial evidence suggests that flaring platforms are of a sufficient size that cost increases will not threaten their competitive position. Research suggests that the cost of installing flare gas meters is estimated to add around £0.010 per barrel of output.<sup>28</sup> Assuming investment decisions are affected at around 5% increases in production costs, competitiveness impacts from the installation of flare gas meters may be felt on production platforms with output of less than 95,000 barrels per year. This is an order of magnitude lower than the lowest oil producing platform in the North Sea.

7.7 The global nature of the steel market requires careful consideration of competitiveness issues. The UK steel industry competes with other EU Member States and with countries outside the EU. The ability of UK steel producers to pass on additional costs resulting from inclusion in the EU ETS is therefore likely to be limited and may be easier for some particular products than others. For example, competitiveness analysis by the Carbon Trust suggests that price rises required to maintain the profit levels of producers of cold rolled flat steel (as a result of EU ETS induced cost increases) are not likely to be significant. However, as set out below, this conclusion may not be applicable to all steel processes and all steel products.

7.8 Other research draws different conclusions for different steel processes.<sup>29</sup> For example, blast oxygen furnaces tend to produce a higher value steel output than production by electric arc furnaces, and as such the competitiveness impacts of environmental regulation are likely to be specific to these two production processes. It is likely to be easier for producers of higher value steel to pass any additional costs through to prices as these costs will comprise a smaller fraction of total costs. Competitiveness issues for integrated steel are therefore likely to be more marginal than in some other industries.

7.9 Analysis of competitiveness concerns regarding expansion to include additional activities in the petrochemicals sector suggests that the implications for UK operator profitability (and competitiveness) are relatively limited. The ability to pass-through costs varies by product and will generally depend on how prices are set in the relevant markets, which in turn depends on the geographic scope of those markets and what product is being considered. It is therefore important that expansion is harmonised across Europe, although for some products cost pass-through would still be limited due to international competition from outside the EU (as prices will be set globally). However, even if costs cannot be passed through, the estimated incremental costs of expansion are small as a proportion of cash margin (around 1%). A comprehensive competition assessment on expansion to petrochemical

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<sup>28</sup> See ERMs report on offshore flaring available at:

<http://www.defra.gov.uk/environment/climatechange/trading/eu/phase2/index.htm#research>

<sup>29</sup> For example, "Industrial Competitiveness under the EU ETS", IEA Information Paper, February 2005 and "EU Emissions Trading Scheme Phase II: Iron and Steel Sector", ENTEC, January 2006.



activities was carried out by NERA and further details can therefore be found in their report<sup>30</sup>.

7.10 Adopting a broad definition, has the potential to eliminate competitive distortions within the EU which have arisen in Phase I, although this is crucially dependent on all other Member States also adopting a broad definition. There may still be competitiveness issues for firms who have non-EU competitors (who are not subject to the same carbon constraints as those within the EU) and an assessment of the impact of this would require a comprehensive competition analysis of all the relevant global markets.

## **8. MONITORING, ENFORCEMENT AND SANCTIONS**

8.1 For information on the general enforcement, sanction and monitoring requirements for the EU ETS, please see the overarching Phase II full RIA. The additional costs to Government in terms of monitoring, enforcement and sanctions at additional sites are negligible and the current framework has sufficient capacity to accommodate all expansion proposals.

## **9. IMPLEMENTATION AND DELIVERY PLAN**

9.1 Please see the overarching RIA for details of the implementation and delivery plan

## **10. POST IMPLEMENTATION REVIEW**

10.1 Please see the overarching RIA for details of the post implementation review

## **11. SUMMARY AND RECOMMENDATIONS**

11.1 The UK, European Commission and other Member States are seeking greater harmonisation of coverage in Phase II to eliminate competitive distortions across the EU25. The clarification of scope provided in the further Guidance indicates that the Commission requires, at the very least, movement towards a broader interpretation through inclusion of the listed sectors and activities. The UK is also keen to address any competitiveness issues within the UK industry, and to pursue simplification measures where possible.

11.2 Following consultancy and internal research and the Commission's further Guidance, Government proposes to expand the scope of the Scheme as per Option 3. This would cover the activities listed in the Guidance (as well as gypsum which has been identified as an appropriate source for expansion). This approach is likely to be acceptable to the Commission as it will target large industrial emitters and should avoid the inclusion of smaller operators. It will also meet the UK Government's key objective to reduce the obstacles facing effective competition through a more harmonised scope of the EU ETS.

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<sup>30</sup> EU ETS Phase II Expansion to Petrochemicals – *Nera/Entec November 2005*

The approach outlined in Option 3 is broadly in line with that proposed in the consultations held in July 2005 and on the Draft Phase II NAP in March 2006.

11.3. Furthermore, definitions of sectors listed in the Commission Guidance have been developed by the UK, France and the Netherlands, which have been adopted in official Climate Change Committee minutes as the enforcement priorities of the Commission.

| <b>Option</b>                                 | <b>Benefits</b>  | <b>Costs</b>   |
|---|--|--|
| 1: Do nothing                                 | No additional costs to Govt<br>No further set up costs for installations that were outside the scheme in Phase I   | Significant risk of NAP being rejected and therefore infraction<br>Competitive distortions arising from Phase I would not be addressed<br>No opportunity to simplify MRV requirements for the glass sector |
| 2: Phase I plus sectors announced in Nov 2005 | MRV at some sites would be simplified potentially reducing costs<br>Harmonisation of scope across the EU improved<br>Provides economic incentives to reduce emissions to more emitters | Significant risk of NAP being rejected.<br>New sites would incur direct costs of participation<br>Some sectors may appeal inclusion  |
| 3: Follow Commission Guidance                 | Low risk of NAP being rejected<br>Around 9MtCO <sub>2</sub> brought into the Scheme  | Risk of NAP being rejected remains<br>Risk that OMS interpret guidance differently   |
| 4: Broad definition                           | Lowest risk of NAP being rejected<br>Greater harmonisation with OMS<br>Reduced competitive distortions   | Many small emitters included<br>Serious delays to timetable<br>Additional information from sites would need to be collected  |

11.4 This RIA recommends option 3.

## **12. DECLARATION**

12.1 I have read the full 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**

## ANNEX A – SUMMARY OF SECTORS AFFECTED

| Option   |              | Sector                                       | No. of new installations | No of existing installations affected | Additional emissions captured  |
|----------|--------------|--|--------------------------|---------------------------------------|--|
| Option 2 | Option 3     | Gypsum                                       | 10                       | -                                     | ~0.4MtCO2  |
|          |              | Rock Wool                                    | 2                        | -                                     | ~0.09MtCO2   |
|          |              | Flaring from offshore oil and gas production | -                        | 110                                   | ~4.7MtCO2  |
|          |              | Glass  | -                        | 30                                    | ~0.06MtCO2   |
|          |              |  |                          |                                       |  |
|          |              | Integrated Steelworks                        | -                        | 3                                     | ~1.1MtCO2  |
|          |              | Crackers                                     |                          | 4                                     | ~2.2MtCO2  |
|          | Carbon Black | 2  | -                        | ~0.4MtCO2                             |  |
| Option 4 |              | Broad definition                             | 190                      | 230-460                               | ~11MtCO2 from new installations + emissions from affected existing installations |

## Annex B - Estimated costs for EU ETS participation

The following table gives a breakdown of the estimated cost of participation in EU ETS, with figures for the likely overall cost of participation for new installations of different sizes. This information is, of course, averaged and in practice the actual cost may be much more or less than shown. In particular the amount of sub-metering required and the accuracy of information to be supplied will have a significant effect on the costs.<sup>31</sup>

|  |                                       |                                  |
|--|---------------------------------------|----------------------------------|
| Permit costs <sup>32</sup>   | (first year only)                     |                                  |
| Band A < 50 ktCO <sub>2</sub>                                      | £1,230                                |                                  |
| Band B 50 to 500 ktCO <sub>2</sub>                                 | £2,300                                |                                  |
| Band C >500 ktCO <sub>2</sub>                                      | £5,490                                |                                  |
| Baseline – collect and verify data                                 | £2000 (estimated)                     |                                  |
| Recording and monitoring data (includes equipment and staff costs) | £5000 (less if not much sub-metering) |                                  |
| Annual Verification  | £2000                                 |                                  |
| Subsistence payment to EA/SEPA                                     |                                       |                                  |
| Band A < 50 ktCO <sub>2</sub>                                      | £2,260                                |                                  |
| Band B 50 to 500 ktCO <sub>2</sub>                                 | £4,470                                |                                  |
| Band C >500 ktCO <sub>2</sub>                                      | £8,670                                |                                  |
| Band A (<50 ktCO <sub>2</sub> )                                    | Band B (50-500 ktCO <sub>2</sub> )    | Band C (>500 ktCO <sub>2</sub> ) |
| ~£12k year 1   | ~£16k year 1                          | ~£23k year 1                     |
| ~£5k p.a. following years  | ~£7k p.a. following years             | ~£11k p.a. following years       |
| ~£32k phase II (5 years)   | ~£44k phase II (5 years)              | ~£67k phase II (5 years)         |

### Policy costs

By allocating to expansion sectors and installations in line with a business as usual projection, the intention is that they will not incur policy costs from EU ETS participation (i.e. they should not have to purchase any allowances to cover their emissions as the allocation at business as usual will be sufficient).

## Annex C – List of expansion consultancy work

<sup>31</sup> Table of costs as described in the FES Report “Expansion sector specific analysis: Glass, Gypsum and Rockwool”  
<http://www.defra.gov.uk/environment/climatechange/trading/eu/phase2/index.htm#research>.

<sup>32</sup> Estimates of permit costs do not include costs of staff time. A review of costs and administrative burdens associated with environmental regulation, including EU ETS, is underway but the figures have not yet been finalised. Including staff cost estimates for permitting would not be expected to affect the approximate overall cost estimates presented in the second table.

|   |       |              |                          |
|---|-------|--------------|--------------------------|
| <b>Filling in the Gaps - CO<sub>2</sub> (Expansion)</b>   | DEFRA | Entec / Nera | April to May 2005        |
| <u>Objectives</u><br>To identify anomalies and gaps arising from the implementation of Phase I, including consideration of the interpretation of "combustion installation". To identify whether installations already regulated in the Scheme have significant additional CO <sub>2</sub> emissions which could be opted in, and to identify the feasibility and impact of their inclusion. The final report is available at: <a href="http://www.defra.gov.uk/environment/climatechange/trading/eu/phase2/index.htm#research">http://www.defra.gov.uk/environment/climatechange/trading/eu/phase2/index.htm#research</a> |       |              |                          |
| <b>Expansion to Non-CO<sub>2</sub> gases</b>  | DEFRA | FES          | April to May 2005        |
| <u>Objectives</u><br>To examine the impacts and feasibility of including non-CO <sub>2</sub> greenhouse gases in the EU Emissions Trading Scheme (EU ETS) for Phase II or after and to inform UK Government policy on options to reduce emissions of non-CO <sub>2</sub> greenhouse gases. The final report is available at: <a href="http://www.defra.gov.uk/environment/climatechange/trading/eu/phase2/index.htm#research">http://www.defra.gov.uk/environment/climatechange/trading/eu/phase2/index.htm#research</a>  |       |              |                          |
| <b>Definition of 'combustion installation'</b>  | DEFRA | ENTEC        | August to September 2005 |
| <u>Objectives</u><br>To analyse the impact of moving from a medium to broad definition of combustion installation, at various capacity thresholds and to compare and identify any impacts against the UK Government's proposed approach to expansion set out in its consultation paper on Phase II.<br><br>The final report has been received by Government and will be published shortly.  |       |              |                          |
| <b>Expansion sector specific analysis: Foundries and integrated steelworks</b>  | DEFRA | FES (AEAT)   | August to September 2005 |
| <u>Objectives</u><br>To analyse the feasibility of expanding the EU ETS to include further CO <sub>2</sub> emissions from the integrated steelworks and foundries sectors in Phase II. The final report is available at: <a href="http://www.defra.gov.uk/environment/climatechange/trading/eu/phase2/index.htm#research">http://www.defra.gov.uk/environment/climatechange/trading/eu/phase2/index.htm#research</a> .  |       |              |                          |
| <b>Expansion sector specific analysis: Petrochemicals</b>   | DEFRA | NERA / ENTEC | August to September 2005 |
| <u>Objectives</u><br>To analyse the feasibility of expanding the EU ETS to include CO <sub>2</sub> emissions from the rockwool sector in Phase II. The final report is available at: <a href="http://www.defra.gov.uk/environment/climatechange/trading/eu/phase2/index.htm#research">http://www.defra.gov.uk/environment/climatechange/trading/eu/phase2/index.htm#research</a> .  |       |              |                          |
| <b>Expansion sector specific analysis: Glass, Gypsum and Rockwool</b>   | DEFRA | FES (AEAT)   | August to September 2005 |
| <u>Objectives</u><br>To analyse the feasibility of expanding the EU ETS to include further CO <sub>2</sub> emissions from the rockwool and gypsum sectors, and further CO <sub>2</sub> emissions from the glass sector in Phase II. The final report is available at: <a href="http://www.defra.gov.uk/environment/climatechange/trading/eu/phase2/index.htm#research">http://www.defra.gov.uk/environment/climatechange/trading/eu/phase2/index.htm#research</a> .   |       |              |                          |
| <b>Expansion sector specific analysis: Offshore flaring</b>   | DEFRA | ERM          | August to September      |

|   |  |  |      |
|---|--|--|------|
|   |  |  | 2005 |
| <u>Objectives</u>   |  |  |      |
| To analyse the feasibility of expanding the EU ETS to include CO <sub>2</sub> emissions from offshore flaring in Phase II. The final report is available at:                                  |  |  |      |
| <a href="http://www.defra.gov.uk/environment/climatechange/trading/eu/phase2/index.htm#research">http://www.defra.gov.uk/environment/climatechange/trading/eu/phase2/index.htm#research</a> . |  |  |      |