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## The role of carbon markets in preventing dangerous climate change - Environmental Audit Committee [Contents](#)

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### Memorandum submitted by INEOS ChlorVinyls

#### 1. EXECUTIVE SUMMARY

- 1.1 INEOS ChlorVinyls is a major chemicals company operating throughout Europe. The company is the only manufacturer in the UK of Chlor-Alkali products—chlorine, caustic soda and chlorinated derivatives.
- 1.2 Chlorine manufacture is very energy intensive, and therefore emissions intensive. However, because the majority of the energy used is electrical, most of the emissions are indirect.
- 1.3 We have provided data to the UK Government that proves that without such compensation, the chlor-alkali industry in the UK cannot survive, and that carbon leakage will occur.
- 1.4 The draft EU ETS Phase 3 Directive includes no harmonised mechanism to compensate exposed sectors for the cost of indirect carbon emissions passed on via electricity prices, and has left the matter of compensation to individual governments.
- 1.5 This means that exposed sectors do not have the certainty they need to underpin business decisions and there is a risk different levels of support across the various member states will distort competitiveness.
- 1.6 We are therefore calling upon HM Government to give assurances that—assuming we can show we meet the criteria for compensation as laid down in the Directive— the Government will provide such compensation, and that the level of compensation will be no worse than that received by our competitors in other member states.

#### 2. THE EFFECT OF EMISSIONS TRADING UPON THE UK CHLOR-ALKALI INDUSTRY

- 2.1 INEOS ChlorVinyls is a major chemical company operating throughout Europe. The company is the only manufacturer in the UK of Chlor-Alkali products—chlorine, caustic soda, chlorinated derivatives.
- 2.2 Chlorine manufacture is very energy intensive, and therefore emissions intensive. The majority of the energy is used as electricity, so most of the emissions are indirect.
- 2.3 Under Phase 3 of the EU ETS, electricity generators will have to buy all of their allowances at auction. They will be expected to pass the carbon costs associated with indirect emissions onto their customers.
- 2.4 The draft Directive provides that energy-intensive industries, which meet the criteria demonstrating that they are at risk of carbon leakage, will be allocated free allowances covering (notionally) all of their direct emissions.

2.5 The original draft Directive (23 January 2008) had no provisions to compensate electro-intensive industries that are heavily exposed to the cost of indirect emissions that will be passed onto them in electricity prices.

2.6 Because chlor-alkali manufacture consumes so much electricity, the cost of indirect emissions would increase the cost of production by more than 10% of turnover. This is well in excess of profit margins earned by the sector in the last five years, so unless these costs can be mitigated, they will wipe out industry margins and, in due course, the industry itself. Mitigation can be done either by passing costs onto customers or by compensation via an agreed mechanism in the EU ETS Directive.

2.7 Caustic Soda and chlorine derivatives such as Ethylene Dichloride (EDC) and Polyvinyl Chloride (PVC) are internationally traded. It can be shown that selling prices in the various global regions move in tandem and it will not be possible to raise prices in Europe to recover increased costs without prompting imports from other regions. Consequently, in the absence of a global climate change accord, it will not be possible to pass on costs to customers.

2.8 Prior to the current economic downturn, European demand for chlor-alkali products was growing at 1% per annum. It can be expected that this growth rate will return once the economic recovery commences.

2.9 There are three main technologies for making chlorine—membrane, mercury and diaphragm. Diaphragm technology is little used in Europe, but the other two technologies are widespread. Mercury technology is less energy efficient than membrane technology, and it also gives rise to mercury emissions to the environment. Because of this, European chlor-alkali manufacturers have committed to phasing out mercury based production by 2020.

2.10 Total European chlor alkali production capacity is approximately 11 million tonnes per annum. Of this, approximately 4 million tpa is mercury based. Since the demand will still exist, this capacity will have to be replaced somewhere in the world by 2020.

2.11 If European producers cannot make an acceptable return on their investment, the new capacity will not be installed in Europe—it will be installed in countries such as the USA, Russia, Saudi Arabia or China that do not have similar carbon constraints.

2.12 Because of the difficulty of transporting chlorine, most chlor-alkali production sites in Europe are vertically integrated, with the chlorine being converted into derivative products at the site of production.

2.13 For this reason, if chlorine manufacture moves outside Europe, it is inevitable that the manufacture of derivative products will follow it.

2.14 China will soon have an massive excess of both chlorine and PVC capacity over domestic demand. Chinese electricity is mostly coal-derived, and therefore the carbon intensity of Chinese chlorine is approximately double that in the UK.

2.15 Chinese PVC is mostly produced via the acetylene route, whereas PVC produced in Europe is produced from ethylene. Acetylene is produced from calcium carbide which is, in turn, produced from coal and limestone. The process is very energy intensive, and it also gives rise to process CO<sub>2</sub> emissions. Because of this, Chinese PVC has nearly five times the carbon intensity of that produced in the UK.

2.16 In summary, solely from a carbon standpoint, it is sensible that chlor-alkali products for consumption in Europe should be produced in Europe. Global emissions will increase significantly if this production is incentivised to move outside Europe,<sup>[43]</sup> even when emissions associated with shipping those products back to Europe are ignored.

2.17 Chlorine and caustic soda both are key building blocks of the modern chemical industry. If chlor-alkali manufacture moves outside Europe, it will inevitably lead to the demise of large sections of the European chemical industry, with significant loss of employment opportunities and significant loss of revenues to the Treasury.

2.18 An independent report produced in 2001 for the DTI showed that approximately 133,000 UK jobs are directly or indirectly dependent upon INEOS Chlor's Runcorn Site. Directly and indirectly, the Site contributes £1.6 billion/yr (2001 currency) to the Treasury. Similar analyses could, no doubt, be produced for many of the other chlor-alkali sites in Europe. There are 84 of these in total.

2.19 It is evident that the environment, many regional economies and several national Treasuries will all suffer if chlor-alkali manufacture is forced to relocate outside Europe.

2.20 However, such relocation will be inevitable if there is no mechanism in Phase 3 of the EUETS to compensate electro-intensive industries for the cost of indirect emissions that will be passed on via electricity prices. Many sites will be forced to close immediately upon commencement of Phase 3.

2.21 The Chlor-alkali industry has argued that compensation should be provided by allocating additional free allowances to electro-intensive sectors that meet the agreed criteria. The quantity of allowances would be determined by benchmarking. The allowances would be drawn from the pool of allowances earmarked for auctioning to the electricity generators. The affected sectors would then sell these allowances to the generators and use the proceeds to offset their higher electricity prices. This mechanism would put electro-intensive sectors onto the same basis as other energy-intensive sectors. The electricity generators would be essentially neutral to the arrangement, and the only "losers" would be the national Treasuries.

2.22 Indirect emissions associated with chlorine manufacture are approx 900,000 te/yr. Assuming a carbon price of €40/te, the cost of these emissions is €36m/yr. This is less than 2% of the Treasury revenues that are directly or indirectly dependent upon the chlorine industry.

2.23 The arguments summarised in paragraphs 2.6 to 2.22, together with a large amount of supporting information, have been compiled into a dossier that was presented to the UK Government in the summer of 2008. This can be made available to the EAC if required, but it is commercially sensitive.

2.24 We can report that the UK Government seems to be persuaded by our arguments. Similarly, other Member States (particularly Germany, Italy, the Netherlands) have argued for compensation for indirect emissions for electro-intensive industries, but we understand some other Member States (essentially those without chlor-alkali or aluminium industries) were opposed to the idea.

2.25 During the final negotiations on the Revised EU ETS Directive in November and December 2008 a compromise was reached. Article 10(a)(6) was inserted into the final Draft Directive (issued 17 December 2008). This provides that member states "may also adopt financial measures in favour of sectors [...]determined to be exposed to a significant risk of carbon leakage due to (emissions) costs passed on in electricity prices, in order to compensate for those costs and where this is in accordance with state aid rules ..."

2.26 Whilst this outcome is better than nothing, the European chlor-alkali industry believes it is far from ideal for the following reasons.

2.27 Under the industry's proposed mechanism (see paragraph 2.21) electro-intensive industries would be allocated additional free allowances by right, and this would give businesses sufficient certainty to enable them to make valid investment decisions. Under the Commission's proposed mechanism, compensation will not be given by right, and it is instead left to each Government to make its own decision to compensate or not. Furthermore, this decision can be reversed at any time, thus depriving businesses of the certainty that they need to underpin investment decisions.

2.28 One major objective of the design of EU ETS Phase 3 is to ensure maximum harmonisation across all Member States. This would achieve a level playing field by eliminating distortions in competitiveness. The industry's proposed mechanism was consistent with the principle of harmonisation. The Commission's proposed mechanism is totally inconsistent with this principle.

2.29 INEOS ChlorVinyls very much appreciates the support given by the UK Government to date on this issue. However, we are aware that the support is not unanimous amongst Government departments, and that things can change.

2.30 The purpose of this evidence is to bring this issue to the attention of the EAC. We believe that is essential that the UK Government takes seriously this threat to the UK Chlor-alkali industry, and takes positive action now to address it.

2.31 The minimum action required of Government is as follows:

— Give a firm assurance that it will give financial support to the industry in accordance with any guidelines laid down in the Directive, subject to the industry demonstrating at a pan-European level that it meets the criteria to qualify for such support.

— Give an assurance that the level of support in the UK will be no worse than that enjoyed by our competitors in other Member States with significant chlor-alkali industries, vis-à-vis Germany, France, Italy, Spain and the Netherlands.

26 February 2009

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43 European PVC production capacity is approximately 8 millions tonnes/annum. This happens to be exactly equal to the excess PVC production capacity that will exist in China 2010. If all the European capacity were to be replaced by production in China, global emissions would increase by 55 million te CO<sub>2</sub>/annum. [Back](#)

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*Prepared 8 February 2010*

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