

ETS S.O.S:

Why the flagship 'EU Emissions Trading Policy' needs rescuing



Based on analysis of 2008
EU Emissions Trading Scheme data

July 2009

About Sandbag

Sandbag is a UK based not-for-profit campaigning organisation dedicated to achieving real action to tackle climate change and focused on the issue of emissions trading. Our aim is to educate and inform civil society about emissions trading policy, to scrutinise how it is working on the ground and to lobby for improvements. In doing this we seek to involve civil society more in the operation and future development of emissions trading.

We are publishing this report to highlight some concerns we have over the current implementation phase of the EU Emissions Trading Scheme. Our aim is to engender debate about the future of emissions trading in the EU. Whether a global deal is reached or not in Copenhagen, we believe, from the evidence to date, the EU can and must demonstrate much higher levels of ambition in relation to its use of emissions trading.

We would very much welcome hearing the views of others on this subject. To find out more and to join the debate, **visit us at sandbag.org.uk.**

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Executive Summary

The EU Emissions Trading System (ETS) is a central plank of the EU's policy framework towards tackling climate change. Covering 50% of Europe's emissions it creates approximately 2 billion tradeable permits a year. The scheme has the capacity to be a very powerful tool in cutting carbon emissions in the EU but it is currently a blunt tool, not delivering to its full potential. This report identifies two major flaws with the Emissions Trading Scheme as it stands and discusses the impact of these in relation to EU ambition on tackling climate change.

Problem 1: Too many permits available for trading

Caps were never set in line with the level of effort the science indicates is necessary. The stated current level of ambition is a 6% cut in 2005 emission levels, averaged over five years. The latest IPCC report indicates that developed countries should be seeking to reduce emissions by around 3% per yearⁱ.

This lack of ambition has been compounded by the fact that allocations to industrial companies in the Emissions Trading Scheme have been consistently too high. Industrial companies have been allowed to grow under the ETS, but with the recession, not only have overly optimistic growth predictions not been realised, but output, and thus emissions, have fallen.

- Industry is likely to have nearly 400 million tonnesⁱⁱ worth of surplus permits across the period 2008-2012. (As a result industrial sectorsⁱⁱⁱ will not have to reduce their emissions.) They will either be able to sell their surplus for windfall profits of over €5 billion (at current market value) or bank them for future use depressing the price of carbon in the next phase of trading^{iv}.
- In addition, there may also be an estimated surplus in the New Entrants Reserve of over 300 million permits by 2012 which could enter the market^v.

- **Overall a total of 700 million surplus permits could be available in Phase 2 of the scheme which are then bankable for use up to 2020. These surplus permits represent 'hot air' in the system as they can be bought and used without any effort towards emissions reductions taking place.**

Problem 2: No ways to deal with falling demand

Insufficiently ambitious caps combined with the recent recession mean that the scheme will have more permits available to participants than needed. Currently, there are no controls in the market to bring down the supply of permits. Instead the scheme was built with a generous safety valve to deal with the unlikely event of their being too much demand: companies were given the right to buy offset credits from overseas (CER credits) to comply with their ETS caps.

- In 2008, 82 million CER credits were used to comply with ETS caps out of a possible 265 million^{vi}. Whilst the volume of CER use is capped, the limit is very high compared to the level of demand.
- **On current trends over 900 million CER credits could be available over Phase 2 of the scheme and bankable (swapped as permits) for use up to 2020^{vii}. Whilst representing emissions reductions abroad, the use of CERs reduces the need for domestic cuts in emissions.**

In total there could be 1.6 billion surplus permits and credits available during Phase 2 of the Emissions Trading Scheme, all bankable for use into the future.

The Consequences: Flagship Emissions Trading Policy Lost at Sea

Targets set for the Emissions Trading Scheme were already weak and have now been further undermined.

ⁱ To be consistent with the latest science emissions in developing countries need to be around 90% below 1990 levels by 2050. Taking a linear path to that target would require annual reductions of around 3-4%

ⁱⁱ Actual figure 387 million permits, based on 2008 trends of surplus permits continuing, see also Annex 2.

ⁱⁱⁱ Industrial sectors defined as CITL Sectors 2-9 covering refineries, coke burning ovens, metals, cement, glass, bricks, paper and pulp.

^{iv} Net position of ETS from 2008-12 is 265 million permits short before NER surplus is taken into account.

^v New Entrants Reserve: A pool of permits set aside to enable new installations to join the ETS. Surplus stated is rounded from a minimum estimate of a 311 million surplus from Deutsche Bank Report: How Long is a Piece of String? 26 May 2009.

^{vi} Deutsche Bank - How long is a piece of string: Another look at the 2008 data, 26 May 2009 - rounded down from 311 million tonne minimum estimate of NER surplus for 2012.

^{vii} Based on current usage patterns for CER.

^{viii} Effort scheme requires 652 million tonnes, supply of surplus permits and CER credits at 1600 million tonnes.

- The 2012 caps on emissions for companies covered by the Emissions Trading Scheme can now be met without any further cuts to domestic carbon emissions taking place^{viii}.
- Permits and offset credits bought before 2012 can be banked and used to cover nearly 40% of the effort required to achieve 2020 caps, again without any further cuts to domestic carbon emissions taking place^{ix}.
- **The EU Emissions Trading Scheme could allow EU companies to stand still on cutting domestic emissions for the next seven years.**

The rules as they stand have once again created a market with too many sellers and too few buyers of emissions reduction permits. The ease with which companies will be able to meet their targets under the Emissions Trading Scheme in Phase 2 and potentially in Phase 3 will mean continuing low prices for carbon and a lack of effective incentives for EU investment in low carbon technologies. Without investment in new technologies the EU locks itself into the long term use of older more carbon intensive technologies^x.

EU leadership on climate change under threat

To maintain leadership on climate change the EU must be honest and open about the problems the ETS is experiencing and commit to resolving them. At a time when other countries are looking to set up their own trading schemes and the world is set to debate a global deal on how to tackle climate change, the ETS, as the EU's flagship policy on climate change, cannot be allowed to fail or fall short. This is important for a variety of reasons:

- A global deal at Copenhagen will only be reached if the EU is displaying significant effort and ambition in cutting its own emissions including those under the Emissions Trading Scheme.
- If world leaders see problems with the EU scheme this may put them off moving towards their own schemes or creating a global carbon market.
- Investment in new energy infrastructure is required in the EU. Without an effective price on carbon there is the potential for technological lock-in to high carbon technologies.

- Developing countries will be looking to the EU to follow its own advice on achieving low carbon growth as it moves out of the recession.

How to rescue the Emissions Trading Scheme

The ambition for the next phase of the Emissions Trading Scheme should be immediately increased to deliver at least a 30% reduction in emissions by 2020, rising to 40% if a deal is reached at Copenhagen.

- An increase to just 2.5% emissions reductions per year in Phase 3 will secure 30% cuts on emissions on 2005 levels^{xi}.
- Against a 2008 baseline of emissions, nearly 40% of effort of Phase 3 targets could have already been achieved through banking in Phase 2. Thus a 30% target would only be an additional effort of 15MtCO₂ per year from 2013 onwards.
- Current estimates already place the cost of reaching a 30% reduction in 2020 as €100 billion lower than the original 20% reduction target. So even moving to a 40% target, to be met through increased effort in the capped sectors, would not be that stretching. Only an extra 160MtCO₂ per year reduction would be required against 2008 emissions^{xii}.
- The approach for distributing effort to different sectors must be made clear in Phase 3. Different targets and methodologies can be used for power and industrial sectors but this must be transparent and there should be no opportunity for cross subsidy through overly generous growth allocations.
- Targets for phase three need to be rebased to take into account the most recent available data and to address the carryover of hot air from phase two.

The EU should also start a debate on how to effectively tighten caps in Phase 2 of the scheme. Options could include:

- An EU wide agreement to cancel the potential surplus of over 300 million permits in the New Entrants Reserve – France and Ireland have already committed to this policy.
- Member States who have still to release more permits via an auction could introduce

^{ix} See Annex 2 for detailed calculations.

^x McKinsey & Company - Pathways to a Low carbon Economy, Version 2 of the Global Greenhouse Gas Emissions Cost Abatement Curve, 2009

^{xi} See Annex 2 for calculations.

^{xii} New Carbon Finance: Analysis launched in press release 20 March 2009.

a reserve price to limit volumes entering the market in the event of a sustained low price signalling there is too much supply ^{xiii}.

- Member States could grant companies incentives for permit cancellation. Having given companies a legal property right to an emissions permit the vast majority of permits in circulation can now only be removed through voluntary cancellation. This could be achieved through, for example, tax incentives against cancelled permits, or requiring companies to use EU permits as alternatives to offsets for their emissions generated in sectors such as transport which are not currently covered by the ETS.
- Despite its difficulties, the EU Emissions Trading Scheme still has enormous potential to cut carbon emissions by enabling the market to do what it does best, uncover the most cost efficient abatement opportunities. It is vital that debate starts now on how to improve the Emissions Trading Scheme.

^{xiii} Michael Grubb and Karsten Neuhoff: Reinforcing the Carbon Market under uncertainty, Cambridge University 2009.

Introduction: The EU leading the way on carbon trading?

For some time the EU has been considered internally and externally, as a leader on climate change policy. In March 2007 the EU agreed to a unilateral target of a 20% reduction in greenhouse gases by 2020 compared to 1990 with the promise to increase this to 30% if an adequate international agreement is reached at the 15th Conference of the Parties (COP) in Copenhagen. In December 2008 the EU agreed a package of climate and energy policies designed to meet the targets it had set itself. The EU Emissions Trading Scheme – the first of its scale anywhere in the world formed an important part of the package. The EU ETS covers 50% of carbon emissions in the EU across over 12,000 installations in the power sector and heavy industry and creates approximately 2 billion permits per year. The primary aim of the EU Emissions Trading Scheme remains as it was in the legislation that established it, to cut emissions.

The theory of carbon trading

The theory of carbon trading is simple. A cap is established on the carbon emissions for participating members of the scheme and permits are issued for each tonne of emissions allowed

under the cap. The permits are then distributed to members of the scheme either through auctioning or free distribution. Either way, the cap should be tough enough to ensure that all polluters need to either reduce their emissions or buy reductions in emission from others. The trading mechanism is introduced to make compliance more flexible by allowing members of the scheme for whom cutting carbon is expensive to buy permits from those who have cheaper abatement options. Access to offset credits from abroad, and joint implementation projects, offer further flexibilities, designed to allow more ambitious caps to be set.

The EU Emissions Trading System was introduced with high optimism and remains a central plank of the EU's policy framework towards tackling climate change. However, as this report will discuss, the scheme, which is now in its second phase, is still marred by a lack of ambition and serious design flaws. Proposed changes announced in December 2008 for the third phase of the scheme starting in 2013 will not do enough to fix the situation.

Report Methodology

Sandbag's analysis only considers installations that have been active across the whole of the Emissions Trading Scheme's lifetime (2005-2008). Any installation registering a value of zero for emissions, allocations or permits surrendered is not considered. This enables us to compare like with like. For this reason the analysis excludes Bulgaria, Cyprus, Liechtenstein, Malta and Romania.

This means that some of our figures may look different from other analysis of the Emissions Trading Scheme in particular our figures for total allocations and emissions are lower. Correspondingly our figures for individual countries will also be lower than analysis which includes all installations. This means that when calculating against emissions in other years we

compare against the same installations (our sandbag analysis) rather than total ETS emissions figures as shown below.

Unless otherwise stated our analysis is based on based on comparing 2008 emissions against 2008 allocations and therefore our results are not affected by scope change between Phase 1 and 2. In addition, yearly numbers of auctioned permits are always included in our figures for allocated permits both at EU and national level.

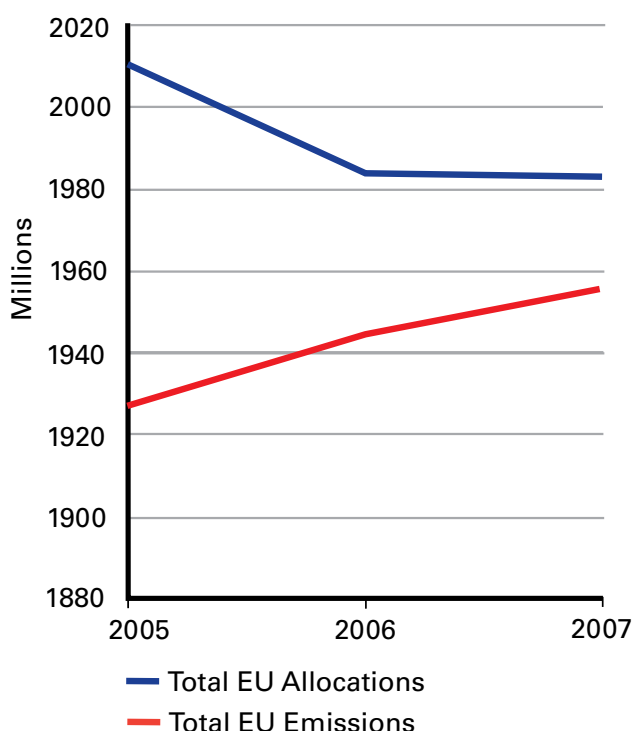
Unfortunately the current dataset does not provide information on scope change between phases. In addition CITL sector definitions are too broad making sectoral analysis difficult. Inclusion of data on these would make it easier for outside organisations to analyse the ETS.

	Sandbag Analysis	Total ETS figures	% difference
2008 Emissions	1850	2120	13
2008 Allocations	1763	2078	15
2005 Emissions	1929	2206	13

Too Many Permits Available for Trading

The problem of too many permits being issued is not new. During the first phase of the Emissions Trading Scheme (ETS) from 2005-2007 (Phase 1) the scheme had far too many permits in circulation and supply far outstripped demand (see graph 1). As a result of this, carbon prices reached zero and stayed there for most of 2007. The market simply was not functioning. By the end of Phase 1 emissions in the EU were 26 million tonnes higher than they had been in 2005.

Graph 1 – Phase 1 Overall Allocations and Emissions

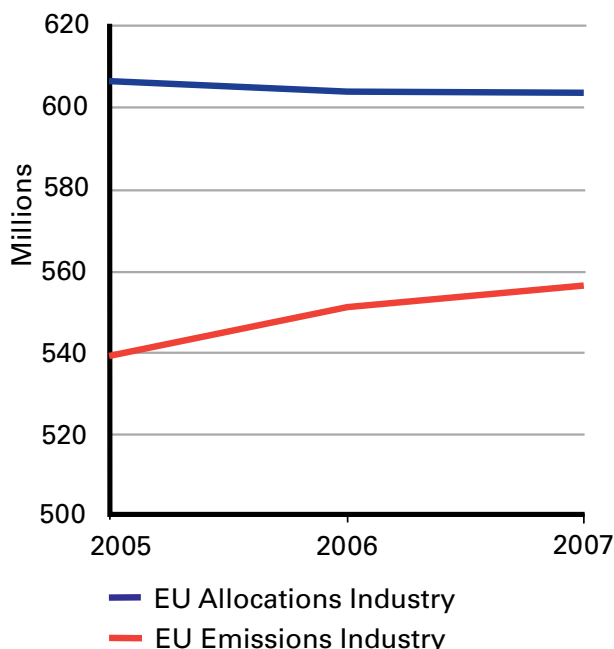


Causes

Overallocation to industry

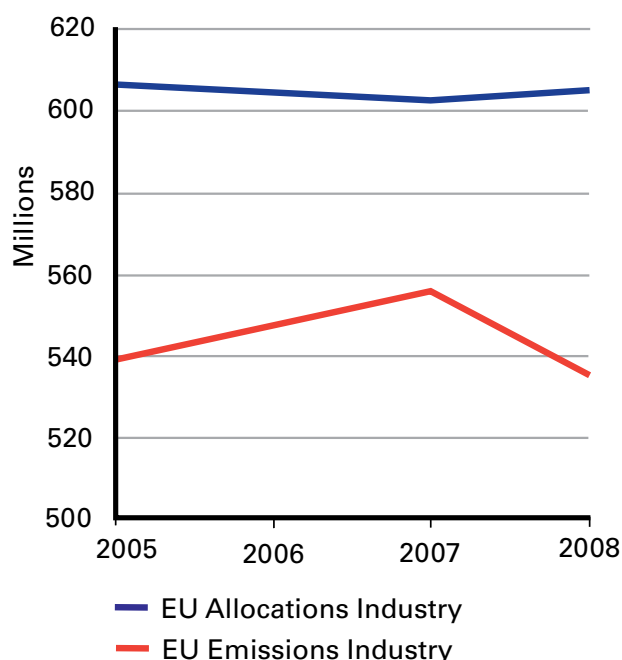
The main reason for the surplus permits in Phase 1 was significant overallocation to industrial sectors^{xiii} as is demonstrated in Graph 2 below. Industrial sectors had a yearly average of 41 million surplus permits during the trading period. The power sector had allocations requiring small cuts to emissions in 2006 and 2007 but did not have to make any since they were able to buy surplus 'hot air' permits from industry for which no emissions reductions took place.

Graph 2 – Phase 1 Allocations and Emissions for Industrial Sectors



For Phase 2, starting in 2008, tougher caps were put in place as is shown below, but virtually all the reductions required in the scheme were placed on the power sector with overallocation to industry continuing.

Graph 3 – Trends in allocations and emissions for industrial sectors of ETS into Phase 2



^{xiii} Industrial sectors defined as CITL Sectors 2-9 covering refineries, coke burning ovens, metals, cement, glass, bricks, paper and pulp.

Even more surplus permits in the New Entrants Reserve

Even aside from the industrial surplus permits there are further surpluses in the system. The New Entrants Reserve (NER) is a pool of permits set aside to enable countries to allow new installations to enter the EU Emissions Trading Scheme. The NER is also supposed to receive the permits of any installations closing down which no longer require their allocated permits.

During 2008 countries did not make anywhere near full use of their NER allowances, indeed the NER pot is likely to be gaining permits faster than it can disburse them with recession making plant closures far more like than plant openings. On current trends DeutscheBank estimate that there are likely to be over 300 million surplus permits in the NER by 2012 ^{xiv}.

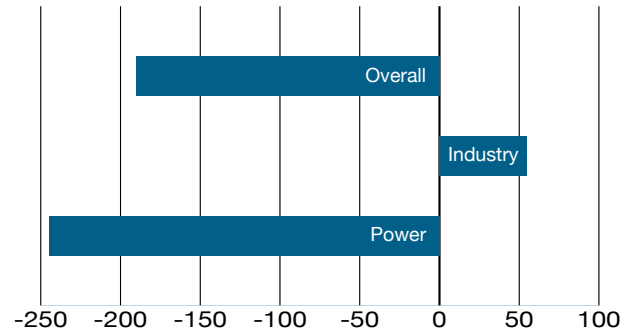
Whilst France and Ireland have already committed to cancelling any surpluses in their New Entrants Reserves, most countries are committed to giving them away or auctioning them. This could mean that in 2012 an additional 300 million permits will enter the market that could either be used to comply with that year's cap or banked into the future. As with industry surplus permits, no emissions reductions are attached to these permits, their release into the market just serves to further weaken the cap on emissions for traded sectors.

The impact of too many permits

Reduced potential for emission reductions

- As currently designed, the scheme allows emission reductions that are required in the power sector to be met by the purchasing of spare permits from industry. Allocations of permits in 2008 required a net reduction of 190 million tonnes when compared against allocations in 2007. However, if the power sector had not had access to spare industrial permits the total demand for reductions in 2008 would have been 245 million tonnes of carbon.
- The power sector was required to cut 245 million tonnes of carbon emissions^{xv} in 2008^{xv}.
- In contrast, industrial sectors were allowed to increase their emissions by nearly 55 million tonnes.

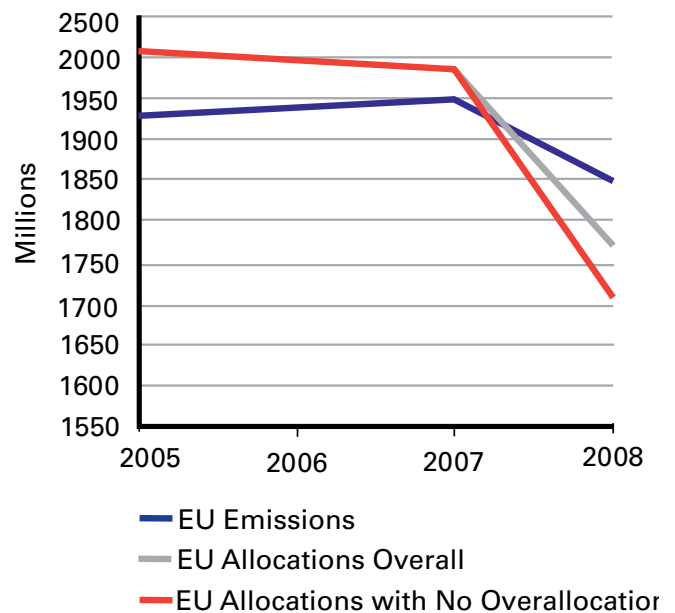
Table 2 – The impact of overallocation on net emission reductions in 2008 (MtCO₂)



Across all five years of Phase 2, if industry had been given targets that were equal to 2007 emission levels rather than growth targets, this would have required approximately 275 million tonnes of emission reductions. The graph below highlights the downward trend in emissions that could have been required under the Emission Trading Scheme without overallocation to industry.

Graph 4 – Emissions reductions required without overallocation (MtCO₂)

Windfall profits to industry for doing nothing



The allowances made for growth in emissions in the industrial sectors meant that even without the recession industrial sectors would have had surplus permits. With the effect of the economic downturn included, industrial participants shared a surplus of 77 million permits in 2008. Modelled forward for the whole of phase 2 (2008-12),

^{xiv} Surplus stated is a minimum estimate from Deutsche Bank Report: How Long is a Piece of String? 26 May 2009.

^{xv} Assumes all auctioned permits were used to increase power sector allocation.

^{xvi} Assumes industry cap at same level as 2007 emissions, allowing no increase into 2008.

this would represent nearly 400 million surplus permits^{xvii}. As EU ETS rules allow, these permits could then be carried into phase 3 from 2012 to 2020.

Whether surplus industrial permits are sold in this phase or banked for use up to 2020 they represent 'hot air' in the system. They are permits for which no effort to reduce emissions has been expended. With 2009 likely to be a much worse year than 2008 in terms of a decline in industrial output, the level of surplus permits could further increase.

Some may argue that once the recession is over the spare permits and the potential to pollute will be needed so that growth can once again resume. This assumes that the link between economic growth and emissions cannot be broken. But as we have been advising developing countries, it is possible now to choose low carbon development patterns. We must surely follow our own advice. Rather than stockpiling spare permits we should seek to decouple growth from emissions.

Another major problem with overallocation is that when industry sells surplus permits there is no effort to reduce carbon occurring. It is simply a transfer of money between the power sector which is under allocated, and industry which is over allocated. **If industry were to sell all its estimated surplus of 387 million permits over 2008-12, at €14 each this would amount to a windfall of €5.4 billion.** At the moment the ETS embodies a reversal of the polluter pays principle, where instead polluters are being paid to do nothing to reduce their emissions.

The table below is based on a comparison of 2008 industrial emissions against allocations shows how a windfall could be distributed amongst industrial sectors across the EU member states. It also highlights that although the EU wide trend was to overallocate to industry, some countries required cuts from their industrial sectors such that even with the effect of the recession they were short of permits.

Table 3 – 2008 financial flows if all potential surplus industrial permits are sold

Country	Potential Industry Windfall 2008 (-)
Germany	384,484,184
Spain	203,914,004
Belgium	93,739,464
United Kingdom	75,849,676
Sweden	66,940,062
Netherlands	60,014,234
France	54,298,062
Slovakia	45,551,212
Greece	21,599,634
Finland	21,052,710
Italy	17,685,458
Portugal	15,779,330
Ireland	9,097,368
Poland	8,771,546
Denmark	5,300,540
Luxembourg	2,591,960
Hungary	2,534,714
Latvia	1,177,456
Estonia	514,612
Lithuania	376,054
Austria	-1,597,862
Czech Republic	-2,231,502
Slovenia	-2,802,520

In all likelihood these potential windfalls will be paid by the power companies, who have been given tight caps and consequently are short of permits. As power companies pass on their compliance cost to consumers, EU citizens are unwittingly providing subsidies to industry. **The potential subsidy to industry over the five year trading phase could be €10 for each and every EU citizen.** In reality consumers living in countries with stringent targets for their power sectors will be paying the most.

^{xvii} Actual figure 387 million permits.

Dangerous Hot Air

Overall a total of 700 million surplus permits could be available in Phase 2 of the scheme which are also bankable for use up to 2020. These surplus permits represent 'hot air' in the system as they can be bought and used without any effort towards emissions reductions having taken place. These surplus permits more than cover the effort required for Phase 2 and thus make that phase of the scheme long on permits overall, reducing the potential incentives for emissions reductions in the next Phase.

At a time when incentives for green investment and green jobs are badly needed, the EU ETS is not currently pulling its weight. Until the situation of surplus permits in the EU ETS is resolved, demand for carbon reductions will remain low, as will carbon prices.

No Way to Deal with Falling Demand

Economic theory assumes that demand and supply will tend to equal out in most markets through a series of adjustments. So when demand falls, prices will fall forcing marginal producers to close down operations. With the EU ETS the EU is the producer as it creates the supply of EUA permits. However, unlike other markets, there is no mechanism in the Emissions Trading Scheme to reduce the supply of permits when demand drops.

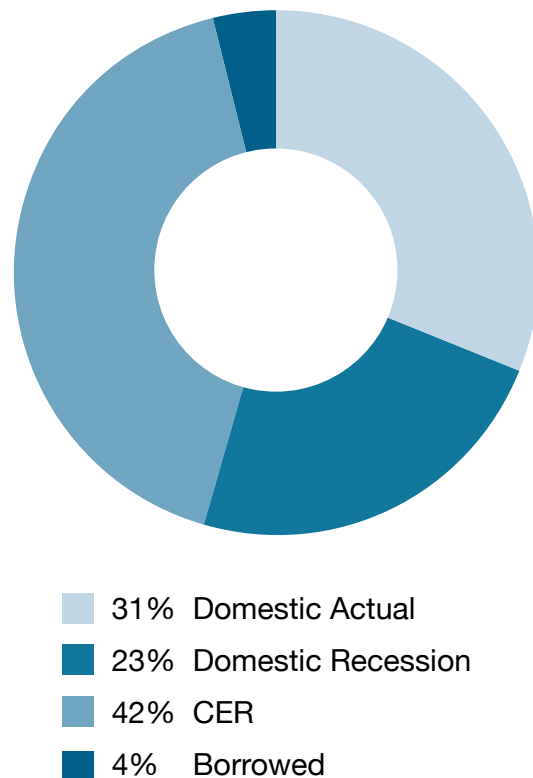
Why Demand has Dropped

The impact of the recession

In 2008, there was a 105 million tonne reduction in domestic emissions from 2007 levels representing the first fall since the scheme's introduction. This has been hailed as a 'great leap forward' by many EU policy makers. However, whilst the cuts in emissions may look impressive, it is important to remember that the reductions achieved are in large part due to the economic downturn, which affected output and demand across the ETS sectors. Initial analysis suggests that nearly half of the domestic cuts were due to reduced industrial output and consumer demand leaving around 60 million tonnes of domestic emissions reduction effort^{xviii}. With so many other climate change policies in play, it is also difficult to ascribe even these cuts to the ETS alone.

The greater than expected cuts to domestic emissions due to the recession combined with the overallocation to industry meant that staying within the EU ETS cap was much easier than had been expected. Compliance was achieved through a mixture of domestic EU reduction in emissions and a smaller than expected purchase of Certified Emissions Reductions (CER) credits from abroad, with a small number of permits being borrowed from future years of the phase.

Table 3 – Source of emissions reductions in 2008^{xviii}



Availability of Overseas Offset Credits

The principle of allowing companies to buy emissions reductions overseas in the form of CER credits was introduced as a safety valve to the EU Emissions Trading Scheme. There had been concerns that there would be a shortage of permits making costs of complying with the scheme too high for companies. The use of CER credits is capped under the EU ETS, however, the amount companies are allowed to use is high compared to the overall cuts in emissions they are required to make. Thus, as with permits, potential supply of CER credits outstrips demand. In 2008, only 82 million out of a possible 265 million^{xix} were used. Over 900 million spare CER permits could potentially be swapped and transferred into the next phase of trading since EU rules allow for all of these credits to be bought and converted into ETS permits that are then bankable for use up to 2020.

^{xviii} New Carbon Finance: analysis launched in press release 16 February 2009.

^{xix} Deutsche Bank, Carbon Emissions – The long and short of it: Power Sector Key to EUA & CER Prices, 5 May 2009.

In all scenarios the need for emissions reductions to take place domestically within the EU is reduced by the availability of CER credits. Companies could choose to meet all of the effort now required for the rest of Phase 2 through purchase of CER credits. Because CER credits are currently trading at a lower price than EU permits it is likely that all available CERs will be used.

Impact on the carbon market

Low Carbon Prices and Little Incentive for Abatement

Compared to the level of surplus permits and CER credits available, demand is low and thus the carbon prices remains too low to stimulate investment in planned abatement. The table below highlights how the cost of credits and permits remains far lower than fuel switching between coal and gas, one of the cheaper forms of abatement^{xx}.

Table 4 – Current cost of compliance with ETS via different mechanisms^{xxi}

Compliance	Primary CER	Secondary CER	EUA Permit	Fuel switching
Cost €/t	€8-11	€11.5	€14	€25-30

For Phase 2 between now and 2012 all effort required to reach the caps can be made through purchase of either surplus permits or CER credits both of which are cheaper than investment in abatement.

- **If we only take into account surplus permits then the scheme is likely to have 45 million permits more than the predicted level of demand.**
- **If the availability of offset CER credits is also taken into account the ETS will have 950 million more potential permits than predicted demand.**

If all surplus permits and CER credits are bought up before 2012 and banked into Phase 3, nearly 40% of the required emissions reductions for 2020 will already be met. Or alternatively put, the first three years of the scheme can be met from these accrued surpluses alone. As a result it is likely that incentives for investment in low carbon technologies within the EU will be seriously undermined.

^{xx} Recent emissions figures in the UK show that in 2009 coal use increased by x% demonstrating that the carbon price is too low to incentivise fuel switching.

^{xxi} Deutsche Bank - How long is a piece of string: Another look at the 2008 data, 26 May 2009 – minimum estimate.

Flagship Emissions Trading Policy Lost at Sea

The targets set under the ETS were never stretching or ambitious enough to respond to the science on climate change. Now with the consequences of continued overallocation to industry, a likely surplus in the New Entrants Reserve, the impact of the recession and the long term availability of CER credits, the targets now look extremely unimpressive in terms of ambition or effort.

Just as Russia was left with large volumes of spare emissions allowances, as its economy went into reverse in the 1990's, the EU is currently in the process of creating large volumes of spare permits or 'hot air' within its EU Emissions Trading Scheme. This is precisely the problem the EU is concerned about in relation to Russia's future involvement in any global carbon trading scheme. To maintain any credibility with respect to this argument the EU must demonstrate it is prepared to take action itself.

Emission reductions in 2008 already take the EU a long way towards its target of 21% reductions against 2005 levels. In addition, significant reductions against 1990 levels have already been achieved thanks largely to fuel switching between coal and gas in certain countries and emissions reductions in the 1990's in EU accession countries. Against this backdrop the unilateral commitment to an overall EU target of 20% reductions in emissions against 1990 levels, is far from ambitious.

Table 1 – 2008 Emissions reductions against different baselines

	2007 baseline	2005 baseline	1990 baseline ^{xxii}
Domestic	5.4%	4.1%	17.5%
Including CER Credits	9.4%	8.2%	21.4%

Targets were already weak and have now been further undermined

Phase 2 Targets

If we take 2008 emissions as our baseline, the effort now required to reach the targets 2012

targets is 652 million tonnes of reductions in the power sector^{xxiii}. As industry is generally overallocated, the power sector represents the total demand within the ETS.

The potential supply of permits is made up of nearly 400 million spare tonnes from the industrial sector, a potential surplus of over 300 million tonnes in the New Entrants Reserve and over 900 million tonnes of available CER credits. There is a clear case of supply (1.6 billion potential permits) outstripping demand (652 million permits required) which has already had the effect of reducing the traded price of permits.

There is a total supply of 1.6 billion surplus permits and credits available in Phase 2.

The power sector can therefore achieve its compliance with 2012 targets without investing in any emissions reductions of its own. Since they are the only substantial buyers in the scheme no further emissions reductions need to take place in the EU for the next four years.

Phase 3

On current trends and rules, there will be a net carryover of surplus permits and CER credits to Phase 3 (2013-2020) equivalent to around 950 million tonnes of emissions reductions. The agreement reached in December 2008 with regard to the next phase of trading requires emissions cuts of 1.74% per year from 2013 to 2020 (compared to allocations in the current phase). When this is adjusted to take into account the potential carryover this leaves only a 1.08% reduction per year now required to meet current 2020 targets. A cut of only 197MtCO₂ per year, compared to 317 MtCO₂ per year across a market covering close to 2 billion tonnes of emissions.

Bankability of permits and credits means that nearly 40% of Phase 3 effort could be met by carry-over from Phase 2, again without companies having to invest in reducing domestic emissions^{xxiv}. Or put another way, the ETS will not require domestic emissions reductions for the next seven years.

^{xxii} Total EU 27 emissions for base year 1990 were 5572 MtCO₂ (EEA website). If we assume 50% were ETS sectors as is currently the case we get 2577 MtCO₂, a further adjustment 13% downwards to align with average difference between overall baselines and sandbag baselines.

^{xxiii} See Annex 2 for detailed calculations.

^{xxiv} See Annex 2 for detailed calculations.

EU Leadership Under Threat

To maintain leadership on climate change the EU must be honest and open about the problems the ETS is experiencing and commit to resolving them. At a time when other countries are looking to set up their own trading schemes and the world is set to debate a global deal on how to tackle climate change, the ETS, as the EU's flagship policy on climate change, cannot be allowed to fail or fall short. This is important for a variety of reasons:

- A global deal at Copenhagen will only be reached if the EU is displaying significant effort and ambition in cutting its own emissions, in particular those under the Emissions Trading Scheme.
- If world leaders see problems with the EU scheme this may put them off moving towards their own schemes or working to create a global carbon market.
- Investment in new energy infrastructure is required in the EU – without an effective price on carbon there is the potential for technological lock-in to high carbon

technologies.

- Developing countries will be looking to the EU to follow its own advice on achieving low carbon growth as it moves out of the recession.

Dangerous Delays to Emissions Cuts

Not only does delaying action to cut emissions within the EU have a political consequence, it also reduces the actual potential for abatement going forward. Without investment in new technologies the EU locks itself into the long term use of older more carbon intensive technologies.

Mckinsey & Company have estimated that at a global level delaying abatement action for 10 years will reduce the potential for abatement by 5.2GtCO₂ per year by 2030. They have also estimated that the costs of investing in abatement technologies will rise. The potential for global abatement in the power sector could fall by 2GtCO₂ per year by 2030 even under a scenario where 50% of renewable and nuclear potential was taken up^{xxv}.

^{xxv} Mckinsey & Company - Pathways to a Low carbon Economy, Version 2 of the Global Greenhouse Gas Emissions Cost Abatement Curve, 2009.

A Rescue Package for Emissions Trading

Despite its difficulties the EU Emissions Trading Scheme still has enormous potential to cut carbon emissions. It is vital that steps are taken to ensure that it does this.

Tougher Targets Needed

The targets for the Emissions Trading Scheme should be immediately increased to at least 30% reduction in emissions by 2020 rising to 40% reduction if a deal is reached at Copenhagen.

- An increase to just 2.5% emissions reductions per year in Phase 3 will secure 30% cuts on emissions on 2005 levels.
- Against a 2008 baseline of emissions, nearly 40% of effort of Phase 3 targets could have already been achieved through banking of permits from Phase 2. Thus a 30% target would only be an additional effort of 15MtCO₂ per year during Phase 3 from current emissions. Put another way the yearly reduction rate would still only be 1.83% rather than the predicted 1.74%.
- Current estimates already place the cost of reaching a 30% reduction in 2020 as €100 billion cheaper than the original 20% reduction target^{xxvi}. So even moving to a 40% target, met through increased effort in the capped sectors, would only require an extra 160MtCO₂ per year reduction.
- **A target of 30% emissions reductions by 2020 is now equivalent in effort to, and cheaper than the planned 21% reductions over the same period.**

A commitment to adjusting the Phase 3 caps to take account of new evidence on surplus emission rights in Phase 2 is also in line with EU policy. The Commission stated in January 2009 that *'when setting targets for post 2012, possible surpluses of emission rights from before 2012 need to be taken into account in order to ensure that the 30% target is met through real reductions after 2012'*^{xxvii}.

An immediate commitment to 30% emission reductions for the ETS and a minimum of 40% reduction if a global deal were reached would support talks at Copenhagen. Without change the EU would be seen as having limited ambition and

effort. In negotiating targets for post Kyoto the EU would also be the only Annex 1 country with banked hot air that it can no longer control since it belongs to industry. No other country is in this position.

Moves to increase ETS targets would also underline confidence in the carbon market as an effective way of reducing emissions. However, if EU leaders are perceived to be defensive about a scheme that is not currently delivering well then this could hamper global talks, and in particular any moves towards creating a more global carbon market.

Design of Phase 3

Industrial subsidy must end

Whilst permits continue to be handed out for free to industry, industry can benefit from windfall profits whenever a surplus situation arises. The EU will introduce auctioning of permits for Phase 3 of the Emissions Trading Scheme but there is a risk that many industrial companies may be excluded from having to buy their permits for fear it may harm international competitiveness. If free allocations are to continue they must be subject to an overall cap relative to current levels to avoid generating continued surpluses. Even if industrial sectors are required to buy some of their permits rather than all, this helps to ensure there is no repeat of the industrial windfalls that are likely to occur in Phase 2.

The need for a new baseline year for emissions

The recession has undoubtedly affected the EU Emissions Trading Scheme. Initial targets were set on the basis of a predicted growth path which has not come to pass. Whilst the recession has been painful, there is an opportunity now to ensure that future growth is green. Moving to a baseline of 2008 emissions for the ETS would be a very positive move in taking global talks forward and in showing EU leadership on climate change. Developing countries have long been advised to follow a low carbon growth path and they will be looking to the EU to follow its own advice. With this action, the EU would prove that it is not seeking to bank emissions savings made due to the recession for use in the future. And of course, increased ambition from a 30% target and a 2008

^{xxvi} New Carbon Finance: Analysis launched in press release 20 March 2009.

^{xxvii} EU Commission Communication to Parliament SEC2009101: 0039 Final.

baseline would serve to provide greater incentives for investment in new green infrastructure and green jobs that the EU badly needs.

Further policy options for debate

An immediate move to 30% reduction targets and a minimum 40% target conditional on a global deal for the Emissions Trading Scheme does much to address the most significant concern of this report. However, it would still leave a situation where up to 2012 no further domestic emissions reductions are required across the EU.

The EU should start a comprehensive debate on how to effectively tighten the caps in Phase 2 of the scheme. Whilst changes to the existing phase of the scheme are more politically difficult than those from 2013 onwards, this should not mean they are ruled out or not discussed. Delaying all action until Phase 3 puts off the cost and the effort of achieving emissions reductions in order to preserve market certainty in the short term. Arguably the current court case being pursued by 8 Member States already creates uncertainty in this phase and yet the market is still able to function since supply side uncertainty can be factored in as well as demand side uncertainty^{xxviii}.

It is particularly difficult to address the situation of surplus permits in the industrial sectors as companies have been given property rights over the permits making any action by the EU or Member States potentially subject to legal challenge. However, there are still a variety of policy measures available that could reduce the supply of surplus permits and credits in Phase 2, and thus improve environmental effectiveness of the carbon market. These should be fully considered and debated.

- **An EU wide agreement to cancel the potential surplus of over 300 million permits in the New Entrants Reserve:** France and Ireland have already committed to this policy and an EU wide political agreement to prevent the NER surplus entering the market in 2012 would be a powerful tool to prevent resulting falls in the carbon price.
- **Restrictions on the use of CER credits:** There are clauses in the EU Directive implementing the Emissions Trading Scheme which allow the Commission to rule on the quality requirements for CER credits that can be used in the ETS. The Commission should

make use of these rules to restrict the use of CER credits to those which are of high quality thus reducing the huge supply that is currently available relative to demand.

- **Reserve price on permits for auctions:** Member States who have still to release more permits via an auction could introduce a reserve price to limit volumes entering the market in the event of a sustained low price signalling too much supply in the market^{xxix}.
- **Incentives for permit cancellation:** Having given companies a legal property right to an emissions permit the vast majority of permits in circulation can now only be removed through voluntary cancellation. This could be achieved through, for example the granting of tax incentives against cancelled permits, or allowing companies to use the permits as alternatives to offsets for their emissions generated in sectors such as transport which are not currently covered by the ETS.

Whilst politically difficult, action in Phase 2 should still be considered to signal the strength of EU commitment to emissions reductions. Without action no further emissions reductions theoretically need to take place for the EU ETS to meet its Phase 2 target. 'Hot air permits' from industry and the potential NER surplus with no emissions reductions attached could simply be purchased to cover the scheme's shortage. Alternatively the scheme's targets could be entirely met through purchase of CER credits meaning that no further emissions reductions would take place domestically. Such a situation would do nothing to drive low carbon investment in the EU.

The weakness of the current targets in the EU's flagship Emissions Trading Scheme is undermining the EU's role as a leader on climate change. However, with swift and decisive action to increase its ambition, the EU has the potential to be a powerful force where its words are backed up with actions.

^{xxviii} 8 Member States are challenging the EU executive for cutting their national allocation plans, a decision is expected in 2011. Source: Point Carbon Press Release – Supply of EU allowances (EUAs) could rise 6 per cent or fall 3 per cent on pending court cases, 25 June 2009.

^{xxix} Michael Grubb and Karsten Neuhoff: Reinforcing the Carbon Market under uncertainty, Cambridge University 2009.

Annex 1: In Depth Country Analysis

The EU wide picture of the Emissions Trading Scheme masks a variety of experiences at country level of which some are explored in the following analysis.

is available. Germany and UK record the largest shortages of allocated permits compared to their emissions, whereas Belgium followed by Slovakia and Sweden record the largest surpluses.

Focussing on 2008 Table 2.1 below shows the net position of each EU country for which verified data

Country	2008 Allocations	2008 Emissions	Net Position
Austria	27824267	30006678	-2182411
Belgium	52839576	43565094	9274482
Czech Republic	84520398	79641748	4878650
Denmark	23887617	26493406	-2605789
Estonia	11334923	13205195	-1870272
Finland	34763490	34961803	-198313
France	124150524	118954018	5196506
Germany	369189804	452939698	-83749894
Greece	62839784	69044598	-6204814
Hungary	24046931	26161284	-2114353
Ireland	15655181	15135674	519507
Italy	195601269	205438128	-9836859
Latvia	2578439	2575816	2623
Lithuania	6877779	5819714	1058065
Luxembourg	2488229	2098895	389334
Netherlands	68998977	73747396	-4748419
Poland	187563477	194222873	-6659396
Portugal	29370281	29196948	173333
Slovakia	31292718	24721700	6571018
Slovenia	8161530	8802345	-640815
Spain	137569620	141064382	-3494762
Sweden	19738923	14242865	5496058
United Kingdom	181684200	237606214	-55922014
EU Total	1702977937	1849646472	-146668535

The Big Five Polluters

Germany, the UK, Spain, Poland and Italy are the 5 biggest polluters in the EU making up 66% of 2008 emissions. They are also the countries required to make the largest reductions in their emissions covering 95% of the total reductions

required under the whole ETS, of which 70% will come from the UK and Germany.

The key trends for the five countries are explored in more detail in the following pages.

Germany

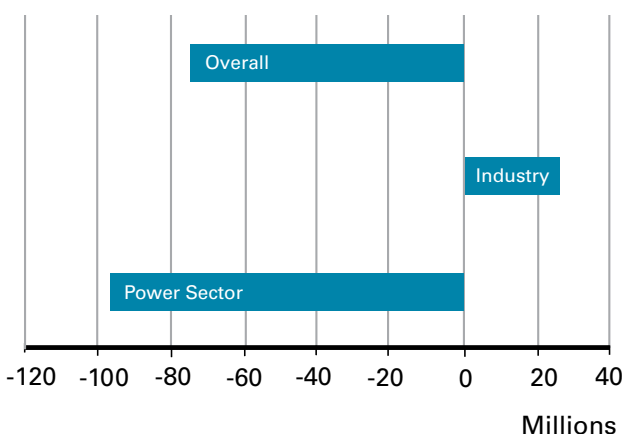
Key Facts

- Germany contributed 24.5% of total EU emissions in 2008 up from 24% in 2005
- Germany was required to cut its emissions by 16.2% in ETS sectors from 2007 levels.
- In reality Germany's domestic emissions reduced by only 4.9%.
- Power sector allocations equalled a cut of 28% while allocations to industry allowed a 24% increase.

Overallocation to Industry

Germany is following the overall pattern of the ETS with overallocation to its industrial sectors. Without overallocation to the industrial sector, Germany would be making greater cuts to its emissions levels. Germany would be cutting 102 MTCO₂ compared to 77MTCO₂. This would represent an extra 32% carbon reduction. The impact of allocations is shown in the table below.

Graph 2.1 – ETS Allocations 2008 in Germany



However, the impact of the recession in 2008 meant that rather than rising, industrial emissions actually fell by 1.7% leaving industrial sectors with 27 million surplus permits. If sold at a standard rate of €14 this could generate a windfall to industry

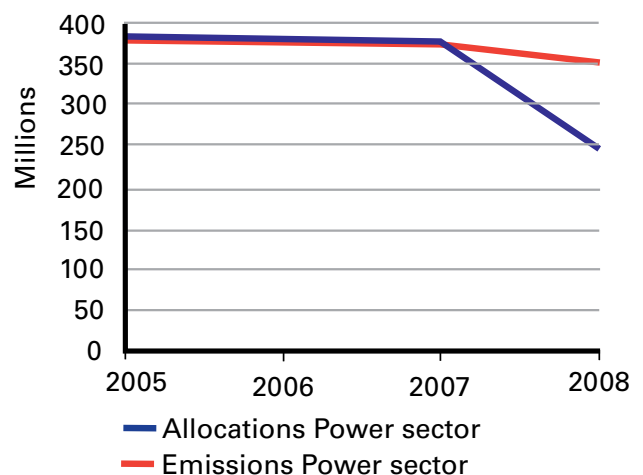
of €378 million. As the recession deepened in 2009 it can be expected that emissions will fall even further leading to an even greater number of surplus permits in future. Across the whole of Phase 2 (2008-2012) this windfall could rise to €1.9 billion.

This effective subsidy to industry would be paid by the power sector in Germany where permits are in short supply and as a result much of the subsidy could come from ordinary German citizens through their fuel bills. If the potential phase 2 windfall was divided equally between each German citizen this would be €23 each over 5 years. Whilst there may be good reasons for subsidising industry during a recession it is quite unacceptable that a scheme aimed at reducing carbon emissions should be serving this purpose.

How Germany is achieving compliance with its cap

In its national action plan Germany made allocations to its power sector requiring steep cuts in emissions of 103 million tonnes of emissions. There were actual reductions of 21.5 million tonnes of carbon emissions in the power sector leaving Germany short by over 80 million tonnes of reductions or equivalent permits.

Graph 2.2 – Allocations and Emissions for the Power Sector in Germany



As discussed, some of this is covered by surplus industrial permits but this still leaves at least 50 million permits required for Germany to achieve compliance with its cap. Assuming that either surplus permits from other countries, or CER credits are used to cover this shortage, this could amount to significant financial flows out of Germany. Taking an average price of €12 (midway between CER credit price and current permit prices) this could amount to a €600 million financial flow out of Germany during 2008. Across the whole of Phase 2 if trends continue as they are this could rise to €3 billion.

This is a concerning trend for Germany, as it shows that the potential funds from companies complying with caps on emissions are not being used to generate investment in green technologies or green jobs within Germany. This is because the price of carbon is too low to incentivise compliance strategies of this nature leaving the German government to instead provide the funding for major green infrastructure projects in the power sector.

United Kingdom

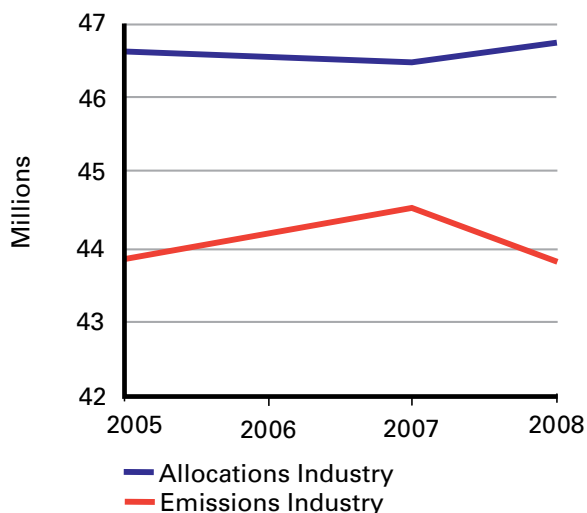
Key Facts

- The UK contributed 12.8% of total EU emissions in 2008 up from 12.2% in 2005
- The UK was required to cut its emissions by 24.7% in ETS sectors.
- In reality the UK domestic emissions reduced by only 1.6% in 2008.
- The UK required a cut of 24% in its power sector but allowed 10% growth in industrial emissions

Overallocation to Industry

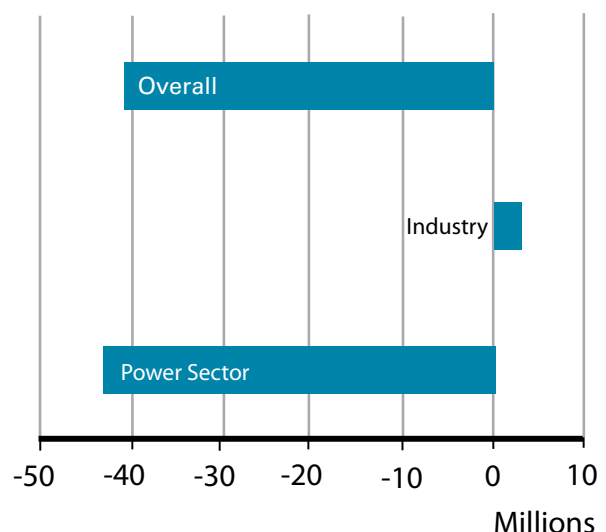
Like Germany and the EU as a whole the UK also displayed the trend of over allocation to industry. The graph below shows how even with an estimated 5% scope increase taken into account, allocations to industry in the UK were above a business as usual scenario.

Graph 2.3 – Allocations and Emissions to Industrial Sectors in the UK



In terms of overall tonnes of carbon emissions the UK is required to cut 42.5 MTCO₂. Without overallocation to industry UK would be required to cut 45.2 MTCO₂ representing an additional 6.4% CO₂ cut as is shown below.

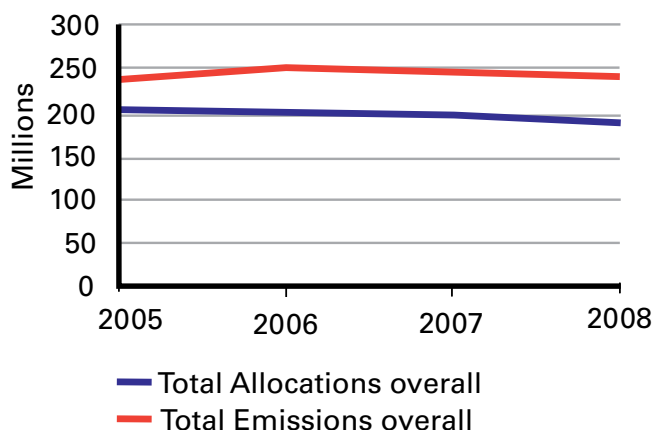
Graph 2.4 - ETS Allocations 2008 in the UK



How the UK achieved compliance with its cap

Reflecting the EU trend, the UK required the power sector to bear the burden of delivering all its ETS cuts with 23% reductions in emissions required. However, in reality the sector only achieved cuts of 1.5% equivalent to just 2.9 million tonnes of emissions. The graph below highlights the tough allocation to the power sector, but also shows how relatively little was achieved domestically in terms of emissions reductions.

Graph 2.5 – Allocations and Emissions to the Power Sector in the UK



Overall emissions reductions achieved within the UK were extremely low with emissions levels just 3.8 million tonnes lower than 2007. Even with an

unexpected 3 million surplus industrial permits – almost equivalent to the actual emissions cuts achieved – the UK was still short nearly 36 million permits in 2008. The UK has followed a path of buying rather than delivering emissions cuts at home, 85% of compliance is estimated to have been met this way in 2008.

Taking an average price of €12 (midway between CER credit price and current permit prices) this could amount to over €400 million flowing out of the UK during 2008. Across the whole of Phase 2 if trends continue as they are this could rise to over €2 billion. As with Germany this is a concerning trend for political leaders keen to emphasise their commitment to green jobs and green investment in the UK.

Spain

Key Facts

- Spain contributed 7.6% of total EU emissions in 2008 falling from 9% in 2005 (in contrast to rises in Germany and the UK)
- Spain was required to cut its emissions by 18.9% in ETS sectors.
- Spain was very close to its required cuts domestically with reductions of 16.9%.
- Spain required a cut of 38% in its power sector but allowed 13.3% growth in industrial emissions

Overallocation to Industry

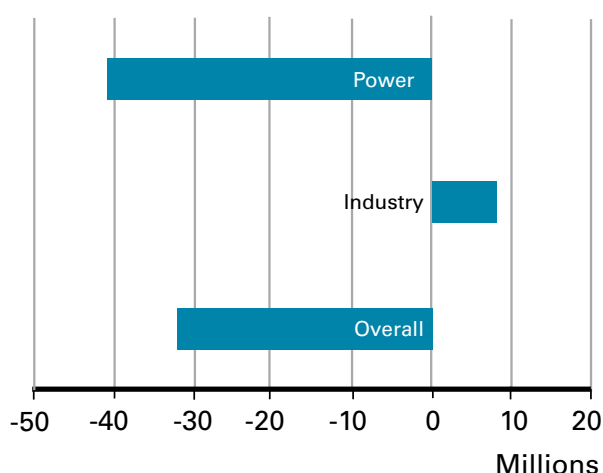
Spain had the third biggest requirement to reduce its emissions in 2008 with a 32MTCO₂ cut. As with the UK and Germany this cut would have been higher at 40MTCO₂ without overallocation to industry, a huge 25% increase.

How Spain achieved compliance with its cap

The percentage cuts in emissions required of the power sector in Spain were greater than any other big five country at 37.9MTCO₂ but even so, the sector achieved over half of its required cuts. The remainder of the reductions came from a cut of

9.9% in emissions across industry compared to the growth target of 13% that had been allowed for through the allocation of permits. It is likely that cuts across all sectors were substantially affected by the impact of the recession. As a result Spanish industrial sectors generated 14.6 million surplus permits which could rise to 73 million over the whole of Phase 2. This would easily cover 2 years worth of the effort Spain is required to carry out under the ETS.

Graph 2.6 – ETS Allocations 2008 in Spain



Poland

Key Facts

- Poland contributed 10.5% of total EU emissions in 2008 up only a fraction from 10.4% in 2005
- Poland was required to cut its emissions by 9.75% in ETS sectors and along with Italy was the only country in the big five to require cuts in industrial sectors.
- Poland required a cut of 9.8% in its power sector AND a 2.2% cut in industrial emissions
- Poland made actual cuts to domestic emissions of 6.5%.

Bucking the overallocation trend

Poland actually shared responsibility for cuts in carbon emissions across all sectors. Particularly striking was a massive 66% emissions reductions required of the metals sector. The graph below shows how all emissions reductions contributed to Polish compliance with its ETS cap, rather than emissions reductions from the power sector being in part cancelled out by overallocation to industry.

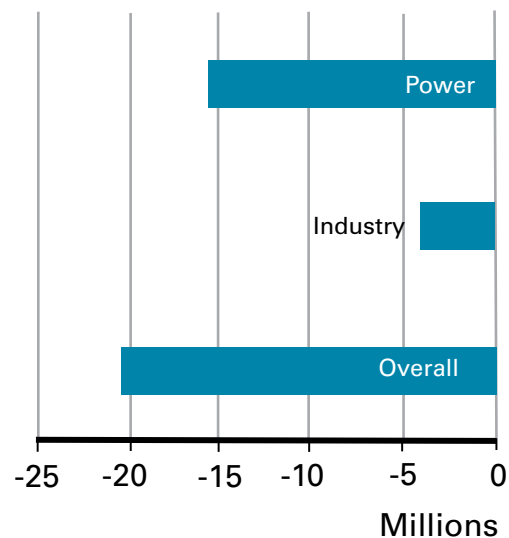
How Poland achieved compliance with its cap

Again Poland bucked the trend, unlike the other big 5 polluters, rather than emissions falling in industry, they actually rose. This left Polish industry short of permits rather than in a surplus situation. So in Poland at least, ordinary consumers were not

inadvertently paying a subsidy to industry for their surplus permits.

In all Poland was short 6.7 million permits, paying for these from outside the country could have cost €80 million which would amount to €400 million across the period. This will undoubtedly be unwelcome politically in Poland.

Graph 2.7 – ETS Allocations 2008 in Poland



Italy

- Italy contributed 11.1% of total EU emissions in 2008 down from 11.5% in 2005.
- Italy was required to cut its emissions by 9.3% in ETS sectors and along with Poland was the only country in the big five to require cuts in industrial sectors.
- Italy required a cut of 13.6% in its power sector AND a 2% cut in industrial emissions
- Italy made actual cuts to domestic emissions of 4.8% taking it more than halfway towards its target.

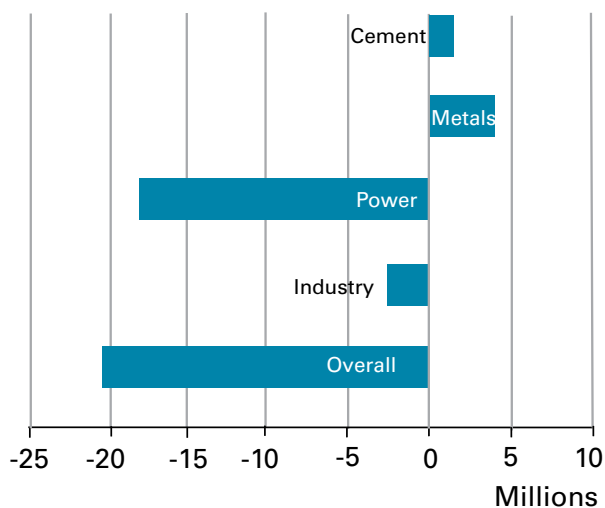
Unusual allocations

Italy, like Poland, did not follow the EU trend of overallocation to industrial sectors. Instead a 2.04% cut was required which, due to the size of Italian industry, made up 15% of the overall emissions cuts required for Italy to meet its cap. However, the overall trend for industrial sectors masks an increase in allocations to the metals and cement sectors.

How Italy achieved compliance with its cap

Italy was short 9.8 million permits overall, equivalent to half of its required emissions reductions. However, industrial emissions actually fell at a greater rate than even the cuts required so even with a cap on these sectors, there were surplus permits to the tune of 1.3 million. This leaves 8.5 million permits likely to be purchased abroad, costing an estimated €100 million, or up to €0.5 billion up to 2012.

Graph 2.8 – Allocations ETS 2008 in Italy



Annex 2: Calculations used in the Report

In order to measure the distance to the Phase 2 cap we looked at the actual emissions in 2008 against the 2008 allocations / cap (including auctioned permits).

We assume 2008 allocations and emissions as baselines from which to calculate additional effort.

Total cap 08	1,763,874,798
Total cap Phase 2 = 08 cap x 5	8,819,373,990
Total Extra Effort =(08 cap – 08 emissions)x 5	428,452,600
Yearly Extra Effort =(08 cap – 08 emissions)	85,690,520 = 86 MT
Rest of Phase Effort(Yearly effort x 4)	342,762,080
Power cap 08	1,154,693,403
Power total cap Phase 2 = 08 cap x 5	5,773,467,015
Power total extra effort = (08 cap – 08 emissions) x 5	815,714,245
Power yearly extra effort (08 cap – 08 emissions)	163,142,849 = 163 MT
Power rest of phase effort (Yearly effort x 40	652,571,396

Total Effort Required to meet Phase 2 targets

Although the net reduction for the scheme from 2009 to 2012 is 342 MtCO₂ the power sector still has to make all of its cuts of 652MtCO₂. This can be entirely covered by combination of purchase of industry surplus permits, CER credits and potentially the NER surplus if it comes to market in 2012. Therefore we can comfortably state that no additional domestic emissions reductions theoretically need to take place although in reality some may occur.

Total Effort required to meet Phase 3 targets

In calculating the effort required against Phase 3 caps we have to revert to the total caps rather than using sandbag's adjusted ones for 2008.

So Phase 3 effort is measured by considering the average Phase 2 cap of 1864MtCO₂ against the starting position of the Phase 2 average cap. However, we stick to our 2008 baseline. This equates to additional effort of 232MTCO₂ per year for Phase 3.

In addition, we need to include the extra effort that is from the Phase 2 cap from the baseline of 2008 emissions. Here we take the figure we calculated

for net yearly effort required under the scheme which is 86MtCO₂ as shown in the table above. This is the linear per year effort required and assumes that all sectors are making cuts in their emissions. For Phase 2 the total effort required per year is greater than the net effort required due to over allocation to industry, we are assuming this would not continue into Phase 3.

Per Year Effort for Phase 3 cap = a cut of 86MTCO₂ is needed on 2008 baseline + 232 MTCO₂ difference between Phase 2 and Phase 3 caps = **317MTCO₂**

Total Extra Effort for Phase 3 caps = 317MTCO₂ x 8 years of phase = **2536MTCO₂**

Calculation - % of 2020 target already met in Phase 3

We assume all of Phase 2 remaining effort in the power sector is met through purchase of permits or CER credits. So the potential carryover is generated by taking the power sector effort of 652 MtCO₂ away from the total potential surplus (915 CER credit + 387 industrial surplus + 311 NER reserve). Of course if any EU ETS sector makes domestic cuts, or surplus permits increase further, the carryover will be even greater.

Carryover (961) / Total Phase 3 effort (2536) x 100 = 38% of the target covered.

38% of 1.74% yearly reduction in Phase 3 = 0.66% yearly reduction covered

Remaining % cut per year in Phase 3 = 1.08%

Calculation - Effort required to move to 30%

1.74 = 2536 (21% reduction)

2.49 = 3622 (30% reduction)

Given that 0.66% already covered, this is only a slight increase on predicted 1.74% a year at 1.83% per year for Phase 3.