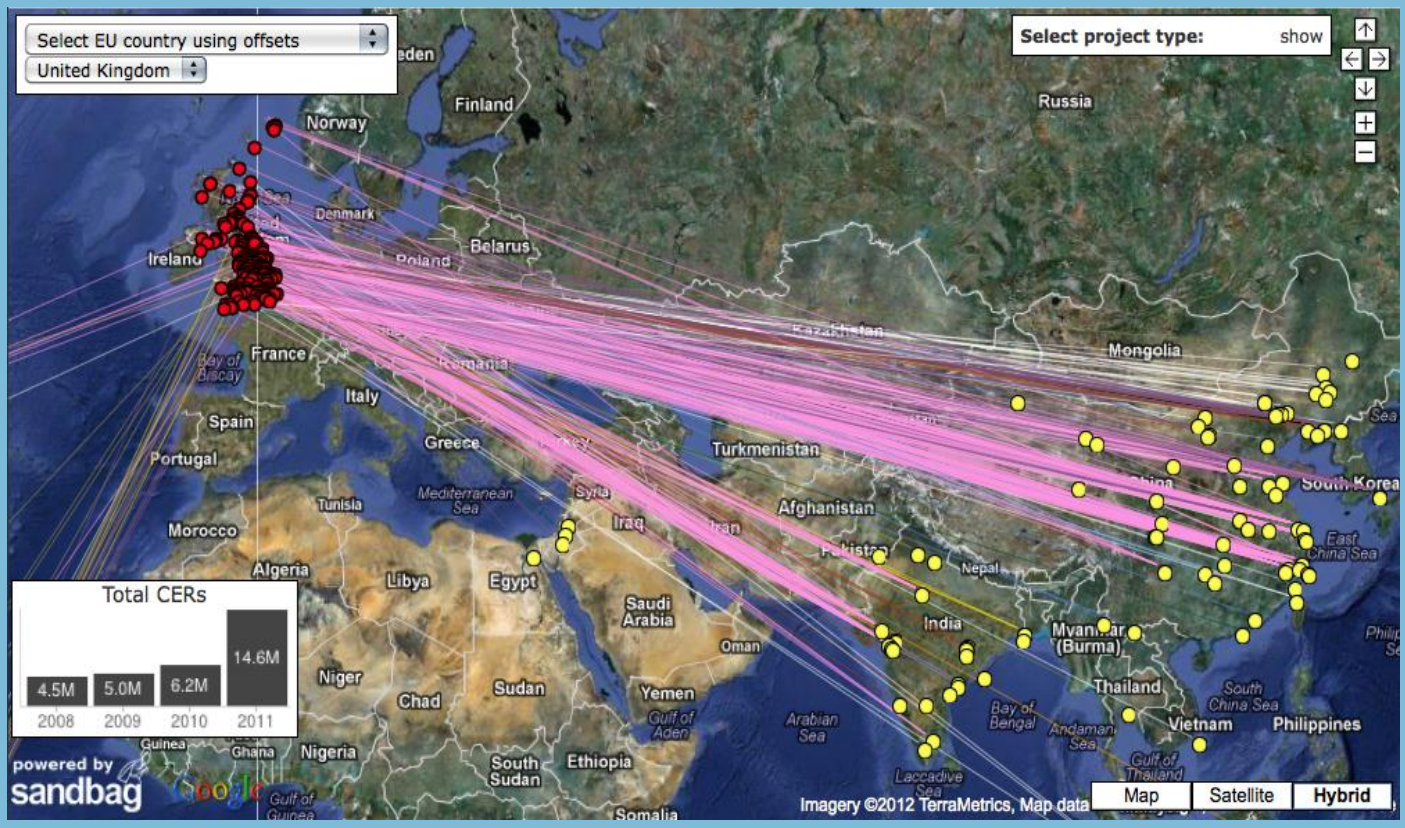
sandbag

Help or Hindrance? Offsetting in the EU ETS



November 2012

About Sandbag

Sandbag Climate Campaign is a not-for-profit campaigning organisation dedicated to achieving real action to tackle climate change and focused on the issue of emissions trading. Our view is that if emissions trading can be implemented correctly, it has the potential to help deliver the deep cuts in carbon emissions and help Europe make the transition to a high tech, low carbon economy.

We are grateful to the European Climate Foundation for helping to fund this work.

Report Authors: Rob Elsworth, Bryony Worthington, Damien Morris
Assistant: James Watson

Sandbag Climate Campaign is a not-for-profit enterprise and is in registered as a Community Interest Company under UK Company Law. Co. No. 671444

EU Transparency Number: 94944179052-82

The numbers

13%

Of emissions in 2011 covered by offsets

254 million

CERs & ERUs surrendered in 2011

52%

Increase in CERs from 2010 - 2011

277%

Increase in ERUs from 2010 - 2011

From 2008 -2011

456 million CERs

and

99 million ERUs

surrendered into the EU ETS to date

407 million CERs

From China, India and South Korea

14,060 CERs

From least developed countries

75.6 million ERUs

From Russia and Ukraine

22.8 million ERUs

From EU member states

7.6 billion CERs

Estimated to be issued by 2020

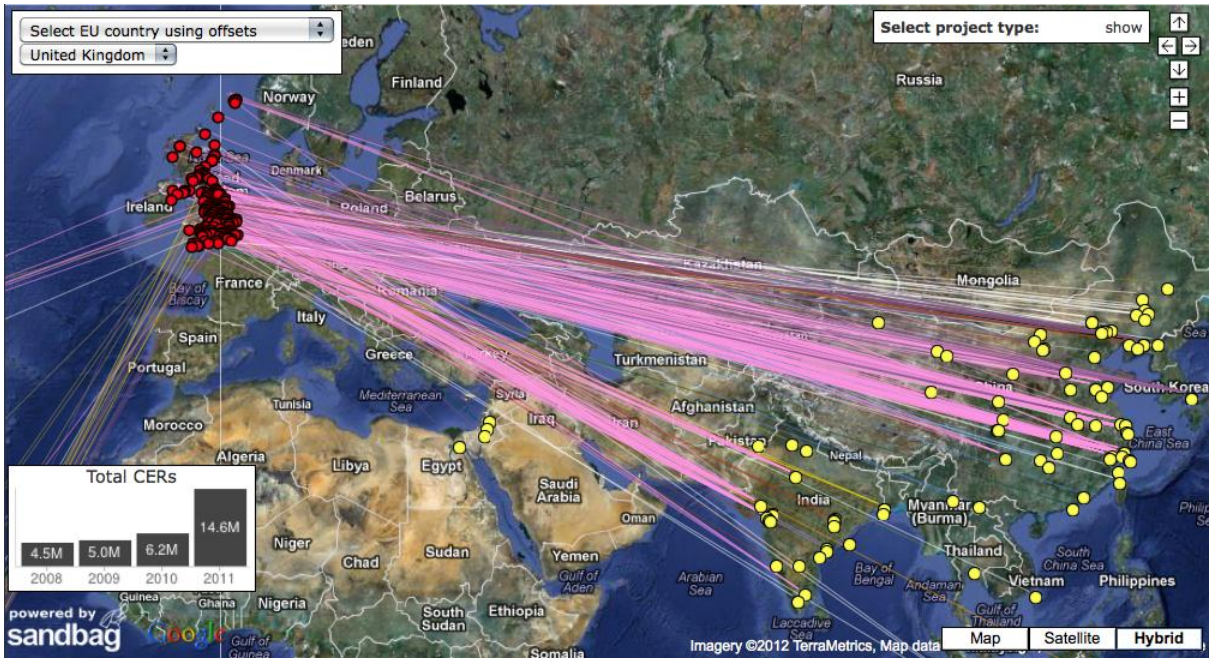
Contents

About This Report

Why we did this analysis and why it matters

This report follows on from work analysing offset usage Sandbag started in 2009. Its primary purpose is to highlight what is happening on the ground. Linking the installations in the EU ETS with the projects they bought offsets from has brought the use of carbon credits to life, as well as dramatically increasing the transparency of the system. The development of our web-based interactive maps (see: www.sandbag.org.uk/maps/offset) will further add to the transparency of how European companies utilise offsets as a means to meet compliance obligations.

Figure 1: Sandbag offset map



Data Sources

The data in this report is taken from the UNFCCC[1], the EU transaction log (EUTL)[2] and the UNEP Risø CDM/JI Pipeline[3]. Data is made available at installation, sector and country level. Through our own research we have also added some company level information for the biggest buyers of offsets. As part of the reporting process of the UN, Clean Development Mechanism (CDM) and Joint Implementation (JI) projects are required to submit a substantial amount of documentation about their projects. This includes the project design documents (PDDs) and the verification reports which are freely available on the UNFCCC website. Likewise, all installations participating in the EU ETS are required to submit information about what type of credits they are using to comply with their caps, which is made available via the EUTL.

[1] United Nations Framework Convention on Climate Change (UNFCCC) [Online] Available from: http://unfccc.int
[2] European Union Transaction Log (EUTL) [Online] Available from: http://ec.europa.eu/environment/ets/
[3] United Nations Environment Programme (UNEP) Risø CDM/JI Analysis and Database [Online] Available from: http://www.cdmpipeline.org/

Executive Summary

In July of this year we published ***Losing the Lead***, our annual assessment of the European emissions trading scheme (ETS). Our headline finding was that the ETS will drive 2.2 billion (bn) tonnes fewer emission reductions than the policy was expected to deliver when the caps were last set in 2008. This weakening of incentives within the policy has arisen because the recession, over-allocation and other overlapping policies have vastly reduced the demand for ETS allowances.

In this new context, the ~1.6bn offsets allowed into ETS seem superfluous, and yet analysts widely agree that the offset budget will be fully exploited, depressing the flagging carbon price still further. Regrettably, this demand for offsets is not driven by any near-term environmental ambition within the EU ETS, but instead by eligibility concerns: compliance installations are rushing to surrender cheap international credits while they are still available, so as to free up domestic allowances that can be banked forward indefinitely. This is most obvious in the case of those industrial gas credits that will be ineligible next year [4].

In this report we look at the role of offsetting in the EU ETS in more detail, specifically with an eye to better understanding how offsetting is functional on the ground, including both the scale and the type of offsets being used.

Overall there has been an 85% increase in offsets being surrendered into the EU ETS between 2010 and 2011. The total number of offsets used by EU installations from 2008 to 2011 is 555 million (m); 456m originating from CDM projects, with the remaining 99m coming from JI projects. In 2011, 254m offsets were surrendered - 178.2 CERs and 75.7 ERUs – and these credits represent a notable increase in the use of credits. From 2010 to 2011 there has been a 52% increase in clean development mechanism (CDM) certified emissions reduction (CERs) credits and a 277% increase of joint implementation (JI) emission reduction unit (ERUs) credits.

As with previous years, offset usage is dominated by industrial gas credits (HFC23 and N2O adipic). 2011 has seen a surge in use, anticipating the impending EU ban on these credits that will come into force on the 1st May 2013. For example, the number of HFC23 CERs surrendered in 2011 increased by 103% (109.5m in total) compared with 2010. The increase is more startling for HFC ERUs, where the number surrendered in 2011 increased by 778% (24.5m in total) compared with 2010.

We look at the sectors and companies that are making the most use of offsetting. It has been found that the heaviest users of offsets were from the power sector, although 2011 saw only a 35% increase in offset usage from this sector. Other sectors, notably the steel and cement actually saw a far steeper increase in use of offsets in 2011. We again expose how companies are undermining their claims of competitiveness distortions by voluntarily sending money to potentially competing companies in exchange for offset credits, which work to make competitors more efficient. We look at the top five steel and cement companies using credits from like sectors, which in 2011 increased to 0.78m steel and 0.25m cement credits being surrendered. A report[5] from the European Commission into carbon leakage via the CDM concluded that like sector credits posed no threat, but nevertheless we believe this practice is highly contradictory, undermining companies' claims that their top concern over emissions trading is the impact on their international competitiveness.

Finally, our report explores a range of policy recommendations that could improve the effectiveness of the EU ETS and restore a carbon price in Europe that works to drives meaningful investment in least cost abatement both here and overseas. The environmental ambition of the

[4] Morris, D. Losing the lead?, *Sandbag*, http://www.sandbag.org.uk/site_media/pdfs/reports/Losing_the_lead_modified_3.8.2012.pdf
[5] Erickson, P. Lazarus, M. Chandler, C. Egenhofer, C. (2011) 'The potential for CDM induced leakage in energy intensive sectors', *AEA*. [Online] Available from: http://ec.europa.eu/clima/policies/ets/linking/docs/potential_leakage_en.pdf

EU ETS remains Sandbag's paramount concern. The use of offsets has a role to play in reducing the cost of compliance in the EU ETS, however, their use should not be detrimental to the environmental integrity and ambition of the scheme. The EU ETS is the principle market for offset credits and its convulsions therefore have a clear effect on the offset mechanisms. The EU ETS has a fixed demand for offsets of around 1.6bn credits, and as the supply of credits in the pipeline is increasing such that an estimated 7.6bn CERs alone will be issued by 2020. This imbalance has led to a price crash in the offsetting market.

In terms of offsetting in the EU ETS Sandbag recommends the following:

Recommendation 1 **Restore the balance of domestic abatement by withholding allowances from Phase III auctions as a prelude to structural reforms. Increasing ambition will ensure offsets are supplemental to domestic action, as they were originally intended.**

Recommendation 2 **Introduce further quality restrictions via a legislative decision, scrutinising coal and large hydro projects as a priority. Such a decision would not alter the EU's existing offset budget of 1.6 bn.**

Recommendation 3 **Introduce rules which predictably alter the availability of offsets in response to the EU ETS prices.**

Recommendation 4 **Reserve offsetting in the long term for least developed countries. The EU should look to engage with other countries on the basis of linked emissions trading schemes, sectoral schemes or via a global emissions trading scheme.**

Recommendation 5 **Do <u>not</u> pursue community offsetting in the short or medium term. The oversupply of allowances in the EU ETS means that any additional supply to the market is not needed. Non-traded sectors should instead be brought under the cap.**

1. Policy Background

What is carbon offsetting?

Carbon offsetting is the reduction of greenhouse gasses (GHGs) in one region to compensate for emissions taking place elsewhere. The nature of GHGs means they move freely around the atmosphere making the location of reductions secondary to the more important need for emissions reductions to take place. Given that location is of less importance, there is an economically rational argument for making those reductions in regions where it is most cost effective to do so, which often means seeking mitigation options in developing countries. Such projects can also potentially help put host countries on a more sustainable pathway through the transfer of low carbon technologies. Emissions savings made in developing countries are then able to be sold in the form of offset credits – where each offset credit represents one tonne of CO2e – to developed counties such as Member States of the European Union (EU) which can use the credits to help meet mandatory emission reduction targets.

There are a number of different kinds of offset credits, this report will focus primarily on the credits originating from clean development mechanism (CDM) and joint implementation (JI) projects, which produce credits entitled certified emissions reduction (CERs) and emission reduction units (ERUs) respectively. Both CDM and JI project are so called *flexible mechanisms* developed as part of United Nations Framework Convention on Climate Change's (UNFCCC) Kyoto Protocol. The vast majority of offset credits come from CDM and JI projects; the CDM alone has already issued over one billion CERs[6].

The CDM allows for emissions reduction projects to be implemented in developing countries whereas JI allows for projects to be developed in industrialised countries – in particular economies in transition[7]. The number of CDM and JI projects has grown significantly since the coming into force of the Kyoto Protocol in 1997, with 4,908 CDM and 464 JI projects registered. From registered projects alone the CDM pipeline estimates that 2.2bn CERs will be issued up to 2012, and 7.6bn issued up to 2020, and the JI pipeline estimates that 0.76bn ERUs will be issued up to 2012[8].

The EU ETS offsetting market

There are two principle markets for offsetting credits: the Kyoto compliance market in which developed countries' governments can use offsets to reach their Kyoto Protocol commitments – for example the EU-15[9] are committed to reducing their collective emissions to 8% below 1990 levels over 2008-2012; and cap-and-trade schemes where private companies can use offsets to meet their mandatory emissions reduction obligations. The most significant cap-and-trade scheme is the EU ETS. Established in 2005 the scheme covers 40% Europe's Kyoto Protocol commitments roughly half[10] of CO2 emissions in Europe, and encompasses the power and industrial sectors. The primary unit of the EU ETS is the European unit allowance, or 'EUA', credits from CDM (CERs) and JI (ERUs) projects which are also admissible. The EU ETS is currently in the final stages of its second Phase (Phase II) which runs from 2008-2012. The third Phase (Phase III) will start in 2013 and run

[6] UNFCCC. (07/09/2012) *Kyoto Protocols Clean Development Mechanism passes one billionth certified emission reduction milestone*. [Online] Available from: https://cdm.unfccc.int/press/releases/2012_18.pdf
[7] UNFCCC. (2012) *Guide to the Climate Change Negotiation Process*. [Online] Available from: http://unfccc.int/not_assigned/b/items/2555.php
[8] Derived from CDM Pipeline/JI Pipeline Overviews [Online] Available at: http://www.cdmpipeline.org (Accessed 01/11/2012)
[9] The number of member countries in the EU prior to 2004, known as the 'EU-15'.
[10] EU ETS covers close to half of the EU's emissions of CO_2 and 40% of its total greenhouse gas emissions. See: http://ec.europa.eu/clima/policies/ets/faq_en.htm

until 2020. Around 1.6bn tonnes of offsets will be allowable for use in Phase II and III of the EU ETS (see below for more details).

The EU's support for the CDM and JI are connected to the international climate negotiations under the UNFCCC. but not bound by them and the EU can redefine its requirements for offsets and relationship with the mechanisms. This point is particularly pertinent given the current ill functioning of the EU ETS. The unforeseen economic downturn in the EU has meant the original cap on emissions proved too generous and subsequently large surpluses of freely allocated allowances are mounting up. This has left the balance of supply and demand in the market out of kilter, with an oversupply of allowances and little demand, the EU's carbon price is therefore languishing at below €8[11] per tonne. A plentiful supply of cheap credits from offsetting projects is further confounding this problem as lower prices in the offsetting market incentivises companies to surrender these credits in order to release EUAs for future use or sale.

What is the EU offsetting allowance up to 2020?

The use of offsets in the EU ETS was established under the Linking Directive[12], which sets out the rules which allow for CDM and JI credits to be used for compliance in Phase II and Phase III of the scheme. The complexity surrounding the use of offsets in the EU ETS has been exacerbated by a number of factors, including: the failure to secure an international climate agreement, the introduction of additional quality restrictions banning certain project types, uncertainty surrounding the supposed extension of the Kyoto Protocol, as well as the glut of EUAs in the EU ETS which has driven the carbon price so low that it's questionable if offsets are needed at all. The transition from Phase II of the EU ETS to Phase III will see many new rules affecting offset use come into force.

The current Phase II and Phase III allowance for offsets in the EU ETS is set at around 1.6bn credits. This figure is made up from a range of entitlements, including: for existing installations which have a Phase II allowance of credits (unused Phase II credits can be utilised in Phase III) as set out in Member States' national allocation plans[13] (NAPs); for new installations entering the scheme; new industrial sectors being added to the scheme as well as aviation. The type of credits allowed to make up these entitlements is equally complicated. CERs coming from projects registered prior to 2013 can continue to be used for compliance. CERs issued from projects registered after 2012 can only come from least developed countries (LDCs). With regards to JI credits, no further ERUs are eligible after 2012 without new quantified emission limitation or reduction commitments (QELRCs) form other Annex B countries[14] of the Kyoto Protocol. Furthermore the Commission has implemented additional quality restrictions to exclude credits from HFC23 and N2O adipic industrial gas projects, taking effect from 1st May 2013, regardless of whether they originated before 2013. Table 1 shows the Öko Institute's[15] detailed breakdown of offset entitlements up to 2020.

[11] EUAs = €7.20 as of 16th November, according to Point Carbon. [Online] Available from: http://www.pointcarbon.com
[12] EU ETS Directive *(*13/11/2004) *2004*/101/EC amending Directive 2003/87/EC establishing a scheme for greenhouse gas emission allow ance trading w ithin the Community, in respect of the Kyoto Protocol's project mechanisms. [Online] Available at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32004L0101:EN:HTML
[13] See Annex I.
[14] UNFCCC. (2008) *Kyoto Protocol*. [Online] Available from: http://unfccc.int/kyoto_protocol/items/3145.php
[15] Hermann, H. Matthes, Felix Chr. (2012) 'Strengthening the European Union Emisisons Trading Scheme and Raising Climate Ambition', *Öko-Institut*. [Online] Available at: http://www.oeko.de/oekodoc/1484/2012-056-en.pdf

Table 1: Offset entitlements up to 2020.

	2008-2020 Min CER or ERU
Stationary ETS II scope	1,522
Of this existing installations	1,451
Of this new entrants in phase II	27
Of this new entrants in phase III	43
Stationary ETS III scope	33
Aviation	68
Total	1,622

While we expect the number of offsets to enter the EU ETS to be in the region of 1.6billon, there is the possibility that this figure will be lower as the transaction costs of utilising ones offsetting allowance might outweigh the benefits for smaller installations. The benefit of using offsets is that they are generally cheaper than using more expensive EUAs to meet compliance obligations. Nevertheless, for some smaller installations the additional burden of having to engage with the carbon market simply outweighs savings that might be gained, for example, research group CDC Climat estimate the non-use rate to be as high as 20%[16]. This figure may reduce as exchanges seek ways to offer services to smaller companies[17], nevertheless, it is correct to assume that not all installations will utilise their legal limits, and the total number of credits that enter the EU ETS may fluctuate around 1.6bn.

A question of demand

The original access to offsets was decided on a number of assumptions that were pertinent to the then economic situation. Fear of a runaway carbon price and a large industrial base was a driving force in some Member States allowing for generous access to offsets in their Phase II NAPs. The economic reality that transpired is very different and assumptions around economic growth and predictions of a high carbon price have fallen away to the reality of a stilted economic environment, which in turn has left the EU ETS struggling to remain relevant.

Understanding the effect of offsets on the EU ETS is particularly timely given the current oversupply of allowances, low carbon price and state of flux between Phase II and Phase III of the EU ETS. The Commission is moving forward with a plan to bolster the carbon price by amending the auctioning timetable – known as 'backloading allowances' – before embarking on more substantial structural reforms of the EU ETS. One of the options being considered relates to changes in the offsetting rules in recognition of the fact that it has contributed to a lack of domestic EU abatement and the falling carbon price. Understanding what is happening on the ground in terms of offsetting is important for meaningful evidence based policy recommendations going forward.

International inertia

All this is happening against a backdrop of political inertia in the international climate negotiations under the UNFCCC, which despite the imminent expiry of the Kyoto Protocol – the world's only legally binding emissions reduction commitment – are questionably still

[16] Delbosc, A. Stephan, N. Bellassen, V. Cormier A. Leguet, B. (2011) 'Assessment of supply-demand balance for Kyoto offsets (CERs & ERUs) up to 2020', *CDC Climat Research*. [Online} Available at: http://www.cdcclimat.com/IMG//pdf/11-06_cdc_climat_r_wp11-10_equilibrium_supply-demand_cer_and_eru_by_2020.pdf

[17] Platts. (2012) 'Germany's EEX offers CO2 auction access for smaller companies'. [Online] Available at: http://www.platts.com/RSSFeedDetailedNews/RSSFeed/ElectricPower/8563736

struggling to find traction. At the time of writing willing parties – in particular the EU – are searching for a means to extend the Kyoto Protocol to a second commitment period. As the Kyoto Protocol is dragged from its first, to a second commitment period, some commentators have likened it to being in a new zombie-like state[18] mostly to ensure the continuation of the offsetting mechanisms which are largely dependent on it to survive.

Offsetting mechanisms have proven themselves adept at finding low cost mitigation solutions, so much so that supply of credits vastly outweighs demand to the point where the collapse of the offset market is not inconceivable. This is, as mentioned previously having a knock-on effect on the EU ETS. As the CDM and JI continue to churn out credits there is the real danger the flexible mechanisms paralyze the EU ETS, swamping it with credits and driving the European carbon price down even further. The EU must be bold in defining what is best for its own scheme to ensure the EU ETS remains functioning and its environmental integrity and ambition is not unduly impaired.

Other ETSs offset usage

While the biggest private market for international offsets is the EU ETS, it is not the only market. Both existing and emerging cap-and-trade schemes allow for offsets but have taken a radically different approach. The EU can learn from emerging cap-and-trade schemes that have taken a different approach to the use of flexible mechanism offsets within their schemes.

Emerging emissions trading schemes are learning from the mistakes made by the EU ETS as well as the New Zealand ETS (NZ ETS) with regards to offsetting. The unrestricted use of flexible mechanism offsets in the NZ ETS has caused the market to ground to a halt[19], and the unexpected accelerated use of offsets in the EU ETS has put downward pressure on the EU carbon price. This has not gone unnoticed by the Commission, who have drawn attention to the effects of this accelerated offset usage in a recent carbon market report[20]. Emerging emissions trading schemes have taken a different approach to offsetting, for example, with the announcement of the EU - Australian ETS link the Australian scheme has reduced the allowance of UN offsets allowed, to just 12.5%[21] of their offset liabilities, or emissions. South Korea has opted to allow up to 10% of installations allowances to come from offsets, however, only domestic CERs are eligible up until 2020, after which international credits are allowed - but only up to 50% of the offset budget. California will allow the use of domestic forestry credits but will not admit offsets from the CDM. Finally China is widely expected to not allow international credits, instead opting for domestic 'Chinese CERs' for use within its emissions trading pilots.

[18] Reyes, O. (2012) 'Carbon markets after Durban', *Ephemera*, 12(1/2) [Online] Available at: http://www.ephemeraweb.org/journal/12-1/12-1reyes.pdf

[19] Gray, M. (2012) Making a kiwi fly, *Jefferies Blance*

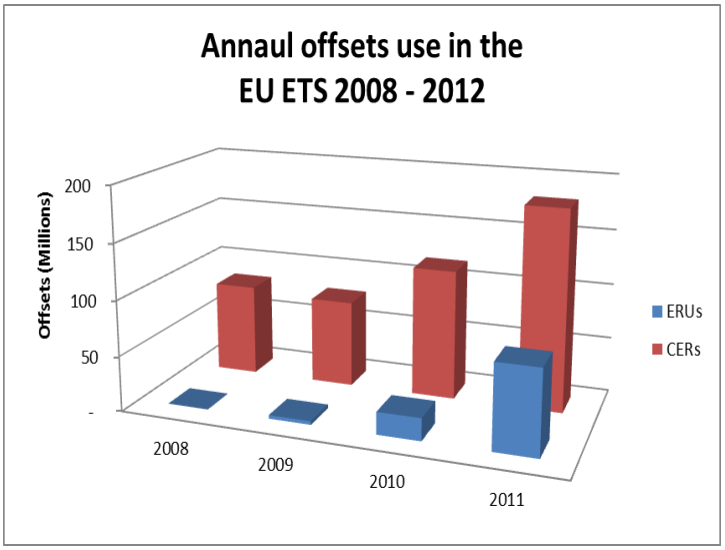
[20] European Commission (25/7/2012) *Information provided on the functioning of the EU Emission Trading System, the volumes of greenhouse gas emission allowances auctioned and freely allocated and the impact on the surplus of allowances in the period up to 2020*. [Commission Staff Working Document] [Online] Available at: http://ec.europa.eu/clima/policies/ets/auctioning/third/docs/swd_2012_234_en.pdf

[21] Government of Australia and European Commission (28/08/2012) *Australia and European Commission agree on pathway towards fully inking emissions trading systems*. [Press release] [Online] Available at: http://www.climatechange.gov.au/~/media/Files/minister/combet/2012/media/august/Combet-MediaRelease-20120828.pdf

2. Offset Use In The EU ETS

Since the start of Phase II[22] in 2008 the number of offset being used by EU installations to meet their emissions reduction obligations under the EU ETS has been increasing with a notable surge in use between 2010 and 2011.

Figure 2: Annual use of EU ETS offsets 2008 to 2011



The total number of offsets used by EU installations from 2008 - 2011 is 555m; 456m originating from CDM projects, with the reminding 99m coming from JI projects. This annual increase can be seen in Figure 2. 2011 has seen a notable increase in the use of offsets with 254m tonnes of offsets being surrendered, 178 CERs and 75.7 ERUs. Between 2010 and 2011 there was a 52% increase in CERs and a 277% increase of ERUs, almost a threefold increase. Overall from 2010 to 2011 there has been an 85% increase in offsets being surrendered into the EU ETS. As a result, in 2011 13%[23] of emissions were covered by the use of offsets.

As discussed in the previous section, the current offset limit for Phase II of the EU ETS was set at around 1.6bn credits and with 555m already having been surrendered, that leaves around 1.1bn available to enter the EU ETS from 2012 to 2020.

From the outset offsetting was intended as a cost containment tool, supplementary to domestic action. However, a number of factors have directly affected the way offsets have been utilised in Phase II resulting in a marked increase towards the end of the Phase:

Failure to secure an international climate agreement:

The EU ETS was designed with the assumption that there would be an international climate agreement signed at COP15 in Copenhagen in 2009. This international agreement never materialised and one knock-on effect was that limits were placed on the use of credits in Phase III such that only credits from third countries where an agreement has been reached and new projects originated in Least Developed Countries would be eligible for use from 2013[24]. This has lead to an increase in projects in other countries seeking to register with the CDM before the cut off date – increasing the supply and reducing prices. .

Quality restrictions:

Not all types of offsets are eligible for compliance in the EU ETS. From the start of the scheme credits from land use, land-use change and forestry (LULUCF) and nuclear projects were prohibited; more recently the Commission took the decision to

[22] Phase II runs from 2008-2012 to coincide with the first Kyoto Commitment Period.
[23] 2011 emissions 1,903,498,716, 2011 offsets 254,072,627 = %13.35
[24] EU ETS Directive (13/10/2003) *Article 11a(5)*. [Online] Available at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2003L0087:20090625:EN:HTML

ban credits from HFC23 and N20 adipic industrial gas project from the 1st May 2013. It is expected that installations and carbon traders will seek to offload any industrial gas credits they have on their books into the EU ETS before this date so as to avoid stranded assets. So far 408m industrial gas credits[25] have been surrendered into the EU ETS. It is estimated that 635m CER and 74m ERU industrial gas credits will have been issued up to 2012, which are likely to enter the ETS with few other available markets for them. This will bring the likely total number of industrial gas credits entering the ETS up to 710m, 44% of the total EU ETS offsetting budget.

The outcome of this ban has been a rush on surrendering industrial gas credits – with participants across the sectors seeking to maximise profits by surrendering the cheap credits and either keeping or selling their more valuable freely allocated EUAs. The Commission have noted this, stating in a recent staff working document that the decision to ban industrial gas credits "increases the economic incentive to bring existing credits from these projects to market for compliance before the compliance cycle for Phase II ends in April 2013"[26]. With more credits coming into the market more downward pressure is placed on the EUA price.

Price difference:

The prices of offsets have traditionally tracked the price of EUAs, albeit with a slight price difference. The plentiful supply of credits has meant that the price of offsets has decoupled from the EUA price. Currently offsets are priced at an all-time low of less than €1 per credit[27]. The lack of demand for offsets is unlikely to change dramatically in the near future, leading to some commentators to predict that there will be no rebound in CER and ERU prices beyond the current year[28]. Some analysts have gone further suggesting that the future of the CER-ERU market could move towards pricing on a case by case basis, rather than the current listed spot price[29]. As the price of offsets remains below those of EUAs companies will utilise arbitrage opportunities to profit from the price difference.

Future uncertainty:

The rules around offset compliance in Phase III are complicated and not always easy for companies to chart, which are confounded by lingering concerns that new quality restrictions will be introduced, particularly around credits from large hydro projects which have been the subject of a Commission report into the quality of offsets[30]. Furthermore, the use of offsets in Phase III is dependent on the credits being exchanged for Phase III allowance. This exchange can take place up to March 2015, which is this end of the truing up period of the Kyoto protocol. After this date it is unclear if credits will be eligible for use in the EU ETS. This general feeling of uncertainty encourages companies to make us of their offsetting allowance while they know the credits they have purchased are eligible.

[25] HFC23 and N2O adipic CERs and ERUs surrendered from 2008 to 2011.
[26] European Commission (25/7/2012) op cit.
[27] CER = €0.72 as of 15th November, according to *Point Carbon*. [Online] Available at: http://www.pointcarbon.com
[28] Bellassen, V. Stephan, N. Leguet. (2012) 'Will there still be a market for CERs and ERUs in two year's time?', CDC Climat Research. [Online] Available at: http://www.cdcclimat.com/IMG//pdf/12-05_climate_brief_no13_-_supply_demand_for_cer_eru_in_the_ets.pdf
[29] Bellassen, V. Stephan, N. Leguet. (2012) op cit.
[30] Ruthner, L. et al. (2011) 'Study on the Integrity of the Clean Development Mechanism (Final Report)', *AEA* [Online] Available at: http://ec.europa.eu/clima/policies/ets/linking/docs/final_report_en.pdf

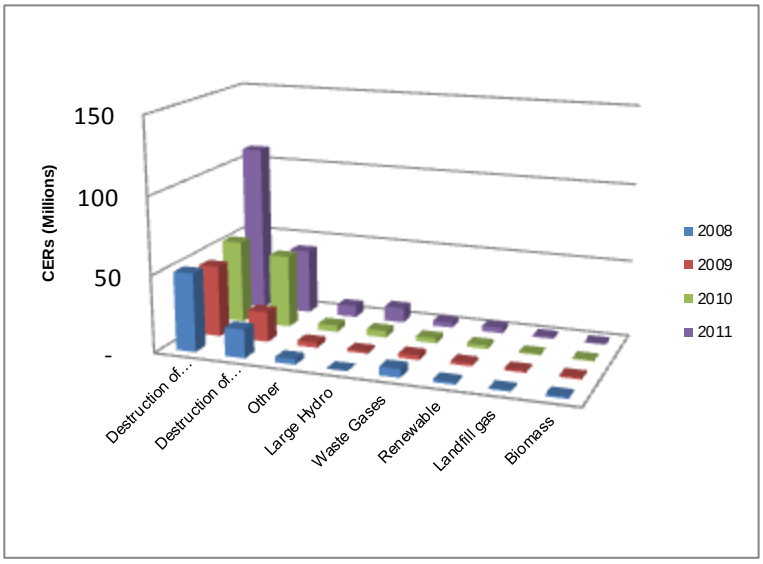
2.1 Clean Development Mechanism

At a glance

From 2008 – 2011, 456m CERs have been surrendered by over five thousand installations to meet their emissions reductions obligations. 178m CERs were surrendered in 2011, a 52% increase on 2010 figures.

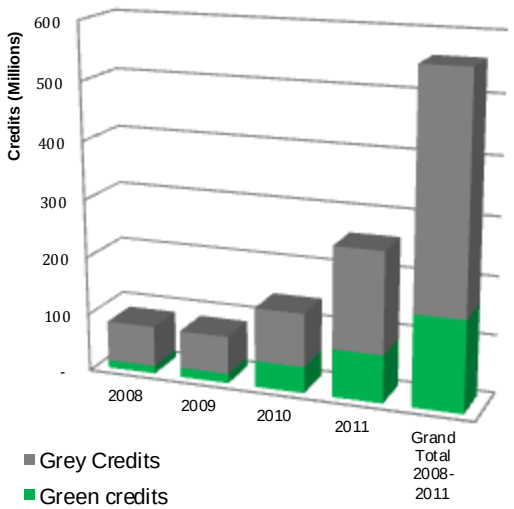
As with previous years, credits from industrial gas projects dominate, with HFC23 and N20 adipic CERs accounting for 82% of all CERs surrendered to date.

Figure 3: CERs by project type 2008 to 2011



There was a dramatic 103% increase in the use of HFC23 credits from 2010 to 2011, as illustrated by the 2011 purple column in Figure 3, which would suggest companies are moving to offload so called *grey credits* (see box below) i.e. those credits which will no longer be eligible for use within the scheme from the 1st May 2013.

Figure 4: Grey vs. Green offsets 2008 to 2011



The distinction of green and grey credits came about as a way of differentiating those industrial gas credits which will not be eligible for use in the EU ETS from 1st May 2013. Green credits on the other hand are those credits not affected by any additional quality restrictions.

As Figure 4 show there has been an increase in the number of grey credits being used for compliance in 2011. This follows the trend of companies looking to offload credits before they are ineligible and thus become stranded assets.

As mentioned in the previous section, the Commission has taken the decision to ban credits from HFC23 and N20 adipic industrial gas credits as of the 1st May 2013. Industrial gas credits not surrendered into the EU ETS by this date are likely to become stranded assents given the lack of demand for such credits in other markets. This means it's very likely that

installations and traders will move to offload these credits into the EU ETS before the cut off date. According to the CDM pipeline it's estimated that 473m[31] HFC23 CERs will be issued by the end of 2013. Already 261m HFC23 CERs have come into the EU ETS, which means it's likely that the EU is set to absorb the majority of these credits up to 1st May cut-off date.

Figure 5 depicts clearly the dominance of HFC23 and N2O adipic credits, both far ahead of the third most prolific credit type, large hydro. It must be noted that credits from a total of 114 different CDM methodology[32] types – which Sandbag has attributed to 16 distinct project descriptors (see Annex II), have been used for compliance by EU ETS installations, including fuel switch, usage of coal mine methane, small hydro, agriculture and metal production. The smallest quantity of credits, at a mere 13,555, has come from transport projects in Colombia and India.

In the future the dominance of HFC23 and N2O adipic projects will disappear with the coming into force of the EU's revised quality restrictions. The UNFCCC may also itself take action to prevent more industrial gas projects being added to the pipeline. A recent report by the CDM Policy Dialogue, commissioned by the CDM Executive Board concluded that in future the CDM should:

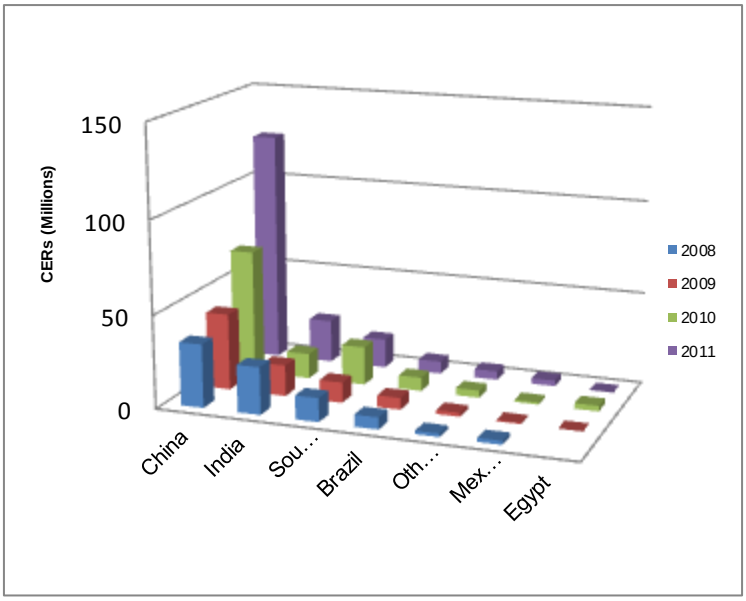
> Stop registering new projects involving gases with comparatively low marginal costs of abatement (e.g. projects that reduce HFC23 and and N2O adipic acid projects), which have matured to the point of being ready to graduate from the CDM[33]. Nevertheless, these revisions have come too late to prevent a huge quantity of industrial gas credits entering the EU ETS in Phase II.

Where the credits come from

A handful of countries dominate the supply of CERs to the EU, in particular China, India, South Korea, and Brazil who have from 2008 - 2011 seen 267.6m (59%), 79m (17%), 60m (13%) and 26.7m (6%) credits respectively surrendered into the EU ETS.

Of these prolific CER producing nations China has been without question the most successful. This is reflected in the number of Chinese credits being used in the EU ETS, including a rapid 85% increase of credits surrendered from 2010 to 2011. This increase correlates with the surge of HFC23 credit use seen in 2011 since China is the source of the majority of these credits.

Figure 5: CERs by host country 2008 to 2011



[31] Sandbag is grateful to the UNEP Risø CDM/JI Pipeline for clarifying this figure.
[32] Ruthner, L. et al. (2011) 'Study on the Integrity of the Clean Development Mechanism (Final Report)', *AEA* [Online] Available at: http://ec.europa.eu/clima/policies/ets/linking/docs/final_report_en.pdf
[33] CDM Policy Dialogue (2012) 'Climate Change, Carbon Markets and the CDM', *CDM Policy Dialogue.* [Online] Available at: http://www.cdmpolicydialogue.org/report/ues_en.pdf

The remaining 23m credits not originating from the aforementioned countries have come from a further 28 host countries. A number of new countries saw their credits enter the EU ETS for the first time in 2011, including Costa Rica, Uzbekistan, Georgia, Fiji and Thailand. The dominance of a small number of host countries has long been noted by many stakeholders, including the Commission, who, in a staff working document in 2010 called for "a better geographical distribution of the benefits from the CDM, in particular for LDC"[34]. The change in offsetting rules in Phase III reflects this concern by only allowing new credits post 2012 to come from projects in LDCs. Despite having priority the scale of offsets coming from LDCs might not be enough to make a noticeable impact on the EU ETS. The pipeline of offsets is such that it's questionable how much demand will be created in LDCs as the EU ETS's offset budget will easily be met by credits that have already been issued to projects registered before 2012.

Least Developed Countries

As has been previously mentioned, from 2013 the only new projects eligible to generate credits will have to be hosted in LDCs. It's worth noting that there have been some LDC credits trickling into the EU ETS already. Cambodia with 8,672 waste heat and Nepal with 5,388 biogas CERs are the only LDCs to have had their CERs used for compliance in the EU ETS to date, the overwhelming majority of which were surrendered in 2011. The CDM pipeline projects that some 296m CERs will be issued by LDCs by 2020. It's anticipated that the majority of these credits will come from Angola, Bhutan, Cambodia, Uganda and Lao, issuing 176m, 29m, 16.8m, 13m and 12.5m CERs respectively. This is a drop in the ocean compared to the vast number of credits coming from already registered projects in other developing countries.

With EU demand for offsets set at 1.6bn credits it remains to be seen if the additional capacity coming from LDCs will make it into the ET ETS. The sheer scale of credits being produced by rapidly industrialising countries and the rush for pre 2013 registration means that the EU's offset budget is likely to be exhausted by credits already issued from more established offset credit producing countries.

Top 10 CDM projects

It's not only countries which dominate the issuance of CERs, a limited number of projects do too. The table below shows the top 10 CDM projects which have seen the most CERs surrendered for compliance in the EU ETS. So far in Phase II, 60% of all CERs surrendered into the EU ETS have come from these 10 projects with the largest industrial gas project in South Korea – although the installation is actually part of French Chemical group, Rhodia - providing 10% of all offsets surrendered so far.

[34] European Commission (30/11/2010) *Information provided on the functioning of the EU Emissions Trading System, the volumes of greenhouse gas emission allowances auctioned and freely allocated and the impact on the surplus of allowances in the period up to 2020.* [Commission Staff Working Document] [Online] Available at: http://ec.europa.eu/clima/news/docs/ia_restrictions_industrial_en.pdf

Table 2: Top 10 CDM projects surrendering CERs into the EU ETS

Project Type	CDM Project Title	CDM ID	Host Country	2008	2009	2010	2011	Grand Total	% share of total CERs surrendered (08-11)
Destruction of N2O Gas	N2O Emission Reduction in Onsan, Republic of Korea	99	South Korea	10,281,000	9,439,519	14,562,237	13,633,570	47,916,326	10.5
Destruction of HFC Gas	Shandong Dongyue HFC23 Decomposition Project	232	China	12,061,739	4,115,136	5,892,059	16,114,363	38,183,297	8.4
Destruction of N2O Gas	N2O decomposition project of PetroChina Company Limited Liaoyang Petrochemical Company	1238	China	3,326,929	4,155,821	11,805,605	15,460,930	34,749,285	7.6
Destruction of HFC Gas	Project for HFC23 Decomposition at Changshu 3F Zhonghao New Chemical Materials Co. Ltd, Changshu, Jiangsu Province, China	306	China	3,862,933	6,224,364	7,523,038	12,358,440	29,968,775	6.6
Destruction of HFC Gas	Project for GHG emission reduction by thermal oxidation of HFC 23 in Gujarat, India.	1	India	8,923,585	7,738,994	4,440,420	8,842,287	29,945,286	6.6
Destruction of HFC Gas	Project for GHG Emission Reduction by Thermal Oxidation of HFC23 in Jiangsu Meilan Chemical CO. Ltd., Jiangsu Province, China	11	China	3,480,434	5,418,537	5,516,225	8,828,783	23,243,979	5.1
Destruction of N2O Gas	N2O Emission Reduction in Paulínia, SP, Brazil	116	Brazil	4,949,509	4,401,455	6,322,511	5,127,787	20,801,262	4.6
Destruction of HFC Gas	GHG emission reduction by thermal oxidation of HFC 23 at refrigerant (HCFC-22) manufacturing facility of SRF Ltd	115	India	7,346,673	3,301,134	4,152,361	5,577,599	20,377,767	4.5
Destruction of HFC Gas	No.2 HFC-23 Decomposition Project of Zhejiang Juhua Co., Ltd, P. R. China	868	China	1,448,820	4,744,789	2,993,810	7,051,351	16,238,770	3.6
Destruction of HFC Gas	Project for HFC23 Decomposition at Limin Chemical Co., Ltd. Linhai, Zhejiang Province, China	550	China	1,457,125	2,508,000	2,639,527	7,859,881	14,464,533	3.2
			TOTAL					275,889,280	60.4

Quality of CERs

The question of quality and environmental integrity surrounding CDM projects remains a highly contentious issue. Additionality is at the core of the flexible mechanisms and is intended to ensure that emissions reductions credited from projects "are additional to any that would occur in the absence of the certified project activity"[35]. Additionality is intended to be watermark for ensuring credits are real and environmentally sound, but determining whether a project is additional is inherently difficult as the process usually involves counterfactual arguments and assumptions.

While undoubtedly fundamental, additionality is not the only indicator as to what constitutes a good, or bad project. For example, the Commission's own quality restrictions have already been extended once to cover credits originating from HFC23 and N2O adipic industrial gas projects, and this decision was based on a number of issues[36] which ultimately led these credits to being banned from the EU ETS, including:

- Creation of perverse incentives to continue to produce or even increase production of HFC23 and of HCFC-22.
- Questions around the additionality, and therefore the environmental integrity of the credits.

[35] UNFCCC (2009) 'Article 12.5', *Kyoto Protocol*..[Online] Available at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009L0029:EN:NOT

[36] European Commission (21/01/2011) *Emissions trading: Commission welcomes vote to ban certain industrial gas credits* [Press release] [Online] Available at: http://europa.eu/rapid/press-release_IP-11-56_en.htm

- Undermining of attempts under the Montreal Protocol to implement an accelerated Phase-out of HCFC-22.
- Not providing value for money as they could have been funded and implemented more cost-effectively by other means.
- Distortion of the geographical distribution of CDM projects in favour of a limited number of advanced developing countries, depriving LDCs of possible investment.

While the ban on industrial gas credits addressed a huge number of credits, it does not end the concerns surrounding offset quality. Concerns remain in particular around large hydro and coal power projects. The Commission themselves have stated that there are no plans to introduce further quality restriction, nevertheless, Art.11(a)9 of the EU ETS Directive gives them the ability to introduce new restriction should it be deem necessary.

Credits originating from large hydro have long been the focus of much attention. A report commissioned by the Commission into the integrity of the CDM highlighted the fact that "large hydro [projects] showed little contribution to sustainable development...some project types, large hydro in particular, could in fact lead to negative outcomes"[37]. Some of these negative impacts include: loss of biodiversity, reduced fresh water availability and quality, loss of livelihood, human displacement estimated to be between 40-80 million people worldwide[38]. Besides the environmental concern the additionality of large hydro projects are highly questionable given that such large infrastructure projects are decisions driven by government mandates who, in the case of India and China, have aggressive targets for hydropower, as explained by a Risø report into the CDM:

> In the case of China, more than 50,000 hydro projects have been developed since the 1980's without CDM. Only since 2005 hydro projects have become CDM responses. Hydro project development, therefore, is an on-going business and developers keep developing these projects, not as an alternative to other investment options, but because that's what they do for a living[39].

Another highly contentious issue is the origination of credits from new coal power projects. The credits issued account for incremental increases in efficiency, which, it is claimed, will only be achieved through the revenue received through the CDM. The need for coal fired power stations to utilise the CDM to unlock efficiency improvements it highly questionable, the most efficient supercritical coal technologies are cost-competitive or cheaper that less efficient subcritical ones. It is estimated that the most efficient coal plants cost only 2%[40] more to install than subcritical ones and result in fuel savings. The additionality of these projects is questionable as China and India mandates the use of the most efficient technologies[41]. These plants would be built or improvements made regardless of the CDM. This was confirmed in a Wikileaks cable from the American Consulate in Mumbai to the US Secretary of State in July 2008 which referenced a CDM validator who confirmed the "use of supercritical technology in all ultra-mega power plants (UMPPs) is a mandatory requirement stipulated by the Indian government. As this technology is the norm for all UMPPs, it has to

[37] Ruthner, L. et al. (2011) 'Study on the Integrity of the Clean Development Mechanism (Final Report)', *AEA* [Online] Available at: http://ec.europa.eu/clima/policies/ets/linking/docs/final_report_en.pdf

[38] Kollmuss, A. (2011) 'Troubling projects in the CDM: Coal and Large Hydro Power', *CDM Watch.* [Online] Available at: http://www.cdm-watch.org/wordpress/wp-content/uploads/2011/09/CDM-Watch_Anja_Kollmuss_Troubling_Projects_in_CDM.pdf

[39] Lütken, S. Penny Wise, Pound Foolish? (2012) *UNEP Riso Centre [Online] Available at: http://www.uncclearn.org/sites/www.uncclearn.org/files/inventory/unep210.pdf*

[40] Chemmannoor, B. A., Hasan, M. M. 'Analysis of Supercritical technology in Indian Environment and Utilizing Indian coal', p. 113 [Online] Available at: http://www.scribd.com/doc/20902219/Paper-on-Super-Critical-Technology-and-Analysis-for-Indian-Environment

[41] Kollmuss, A. (2011) op cit.

be put in place by the project developer with or without the CDM benefit"[42] The decision is even the more controversial given the decision by the CDM Executive Board to go against the recommendations of the UN's own CDM methodology panel that advised suspending crediting rules[43] for coal projects. The concerns of the methodology panel were driven by evidence that the rules allowed for significant over-issuing of credits.

So far 6 coal power projects have been registered on the basis of the old, flawed methodology which will lead to over-issuing of credits from non-additional projects. The timely pre 2013 registration of these projects means the credits generated, estimated to be 90m[44] CERs by 2020, will all be eligible for use within the EU ETS. It seems highly contradictory that coal power plants in the EU will soon be able to used offset generated in coal power stations in China and India to count towards their emissions reduction targets. The CDM was intended to have a positive effect on sustainable development for local communities, and invest in clean technologies. Instead it seems European companies will be investing in a source of pollution for local communities and the global climate which will be locked in for decades to come.

Gold standard CERs

There is a number of ways to differentiate different kinds of CERs, including by identifying if they are *grey*, *green* or *LDC* credits, which, in their own way distinguish if a credit is eligible for use in Phase III of the EU ETS. Though it does not distinguish eligibility there is another distinct CER type, *Gold Standard (GS).* GS credits can be seen as a distinct category of offsets which gives additional certainly regarding the sustainability standards of UN credits. It was established in 2003 by WWF and endorsed by more than 80 NGOs. The standard specifically only covers renewable energy and energy efficiency technologies projects. The GS gives a clear assurance that certain projects have gone beyond the basic requirements to ensure that additionality, and sustainability are central to the projects.

Gold Standard credits have been used for compliance in the EU ETS, but the volume suggests that there is little real appetite for these credits. After an initial 'high' in 2008 of 53,000 GS CERs, subsequent years have seen an annual intake around 4,000 GS CERs. The majority of these CERs originated from biomass, followed by renewable and small hydro, projects. Table 3 list the top five companies surrendering GS CERs.

Table 3: Top 5 companies surrendering GS CERs

Company	2008	2009	2010	2011	Grand Total
Xella	52,692	-	-	-	52,692
Vattenfall	-	3,960	1,907	-	5,867
Fortum	-	-	-	3,800	3,800
KVV	-	-	2,201	-	2,201
Energias de Portugal	336	-	285	1,164	1,785

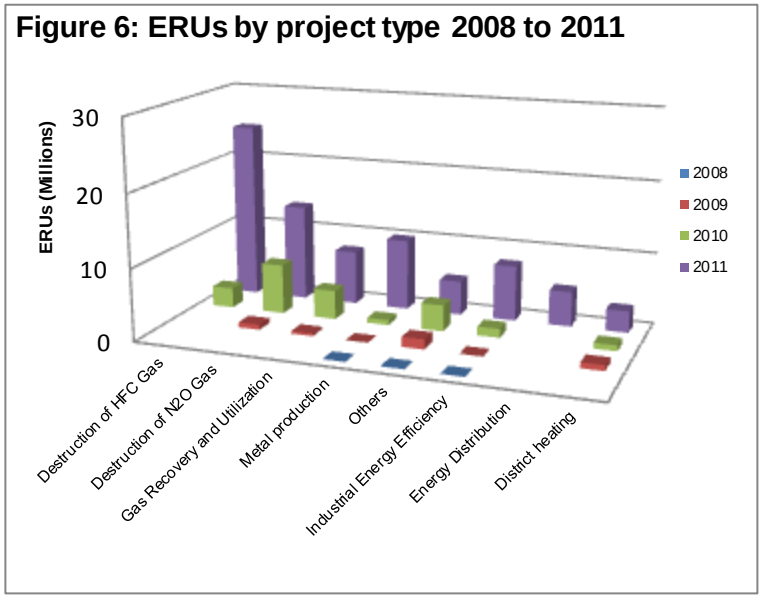
[42] Parekh, P. Wikileaks and the CDM, http://www.climate-consulting.org/2011/09/09/wikileaks-and-the-cdm/
[43] CDM Watch/Sierra Club (18/07/2011) *EU action required as UN Panel keeps flawed rules of carbon offsetting scheme in place* [Press release] [Online] Available at: http://www.cdm-watch.org/wordpress/wp-content/uploads/2011/07/PR_EU-action-required-as-UN-Panel-keeps-flawed-rules-of-carbon-offsetting-scheme-in-place_18072011.pdf
[44] CDM Watch, (14/11/2012) *International offsets undermine European climategoals – European Commission's Carbon Market Report shows* [Press release] [Online] Available at: http://www.cdm-watch.org/?p=4361

2.2 Joint Implementation (JI)

At a glance

From 2008 – 2011, 99m ERUs have been surrendered by over one thousand installations to meet their emissions reductions obligations, over a third of them in the last year. The number of ERUs entering the EU ETS sharply increased from 20.1m in 2010 to 75.8m in 2011, almost a threefold, or 277%, increase on the previous year.

Figure 6: ERUs by project type 2008 to 2011



Much of this increase is down to the issuance of a large number of credits from three HFC23[45] projects in Russia, as well as increased credits coming from a range of project types in the Ukraine, including gas recovery, metal production and industrial energy efficiency. The full range of credit types and the annual increase in surrendering can be seen in Figure 6.

Although the total number of ERUs being used for compliance is considerably lower than the CERs, the number has increased sharply and, with restrictions looming, the figure is likely to increase.

Joint implementation did not get off to a 'prompt start'[46] and the somewhat delayed surrendering of ERUs into the EU ETS is reflective of this. Credits from JI projects entering the EU ETS are unlikely to reach the same scale as those coming from the CDM due to fewer mitigation options available in the host countries available to the mechanism.

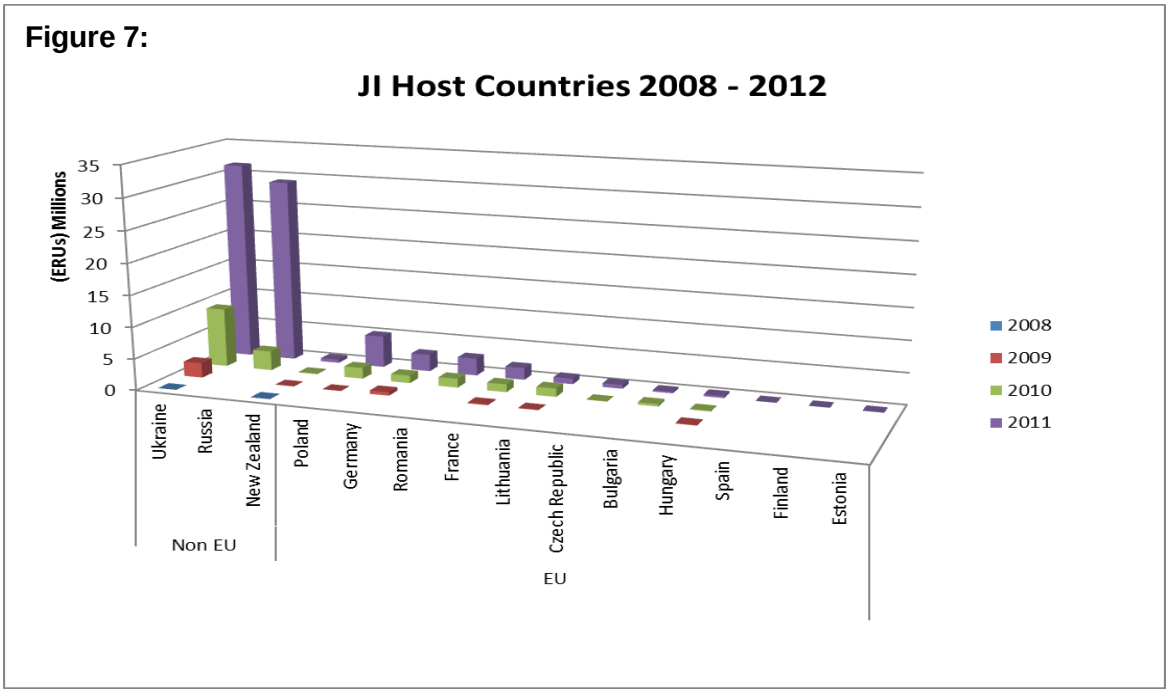
The majority of credits come from a relatively limited number of countries, as shown in Figure 7. Russia and the Ukraine are by far the biggest suppliers of ERUs, experiencing a staggering increase in ERUs surrendered of 845% and 235% respectively from 2010 to 2011.

For Russia, 85% of their ERUs come from just three HFC23 projects. Ukraine's ERUs come from a wider range of projects however specific concerns have arisen around Ukrainian ERUs, notably fears of overzealous endorsement and approval of some Track 1 projects. The creation of ERUs is dependent on the surrounding of an equal number of AAUs. Both Russia and the Ukraine have large AAU surpluses, estimated to be as large as 7.3bn and 3.1bn[47] tonnes respectively, meaning they are able to be generous with issuance of ERUs. The additionality of JI projects has been questioned by some. A recent report[48] in to the

[45] One project focuses on the reduction of SF6, although falls under UN sectoral scope 11 which covers HFC projects.
[46] Leguet, B. (12/07/2010) 'Joint what? Why Joint Implementation matters', *Climate Change and Policy Practice.* [Online] Available at: http://climate-l.iisd.org/guest-articles/joint-what-why-joint-implementation-matters/
[47] Wyns, T. Kollmuss, A. (2012) 'The Phantom Menace: An Introduction to the Kyoto Protocol Allowances Surplus', *CDM Watch*. [Online] Available at: http://www.cdm-watch.org/wordpress/wp-content/uploads/2012/08/120726_AAU_surplus_briefing_LR_.pdf
[48] Zhenchuk, M. (2012) 'The Integrity of Joint Implementation Porjects in Ukraine', *The National Ecological Centre of Ukraine*. [Online] Available at: http://en.necu.org.ua/files/2012/11/JIUkrainian_IntegrityStudy_en.pdf

integrity of JI projects in the Ukraine found that approximately 40% of accredited projects had begun operation at least 3-5 years before registering with JI. The report highlighted problems arising from the over-generous issuance of AAU backed ERUs which is much more likely to occur in countries with quantified emissions reduction targets that sit well above current emissions levels. They also highlighted concerns over the integrity of the verification process and recommended that an international overseeing body be created for all JI projects.

Figure 7:



An interesting dimension to JI projects is that while they were primarily intended for *economies in transition* a number of EU Member States have also utilised the project-based mechanism. Figure 7 shows the breakdown of ERUs according to host country and year. In total 11 EU Member States have originated ERUs which have subsequently been surrendered into the EU ETS. The scale of ERUs coming from EU Member States experienced a two fold increase in 2011 from the previous year, taking total numbers surrendered in 2011 to 14.5m. In total between 2008 and 2011, 22.8m ERUs, representing 23% of the total, have been surrendered into the ETS, originating from Poland, German, Romania and France predominantly**.** Table 4 lists the 11 EU countries which have generated ERUs, including their project type, which have subsequently been surrendered into the EU ETS.

Table 4: EU JI Projects which have had their credits surrendered into the EU ETS

Country	Project Type	2009 ERUs	2010 ERUs	2011 ERUs	Total
Bulgaria			**374,112**	**254,390**	**628,502**
	District heating		312,257	185,395	497,652
	Renew able			47,239	47,239
	Small Hydro		61,855	21,756	83,611
Czech Republic			**62,510**	**614,062**	**676,572**
	Biomass			52,786	52,786
	Destruction of N2O Gas			289,651	289,651
	District heating			135,843	135,843
	Landfill gas		62,510	131,371	193,881
	Small Hydro			4,411	4,411
Estonia				**6,294**	**6,294**
	Renew able			6,294	6,294
Finland				**28,853**	**28,853**
	Destruction of N2O Gas			28,853	28,853
France		**153,637**	**1,243,995**	**1,933,504**	**3,331,136**
	Agriculture			57,953	57,953
	Destruction of N2O Gas	153,637	1,243,995	1,813,978	3,211,610
	Fuel Sw itch			55,140	55,140
	Industrial Energy Efficiency			6,433	6,433
Germany		**543,723**	**1,220,124**	**2,686,291**	**4,450,138**
	Destruction of N2O Gas	543,723	1,220,124	2,686,291	4,450,138
Hungary		**98,637**	**91,911**	**299,321**	**489,869**
	Agriculture			35,000	35,000
	Biomass		38,376	151,011	189,387
	Destruction of N2O Gas			109,042	109,042
	Landfill gas	98,637	53,535	4,268	156,440
Lithuania		**48,059**	**1,331,818**	**883,652**	**2,263,529**
	Destruction of N2O Gas		1,313,797	809,817	2,123,614
	Landfill gas		5,876	12,483	18,359
	Renew able	48,059	12,145	61,352	121,556
Poland		**2,186**	**1,746,731**	**5,073,764**	**6,822,681**
	Destruction of N2O Gas	2,186	1,746,731	4,901,524	6,650,441
	Renew able			172,240	172,240
Romania			**1,413,175**	**2,750,690**	**4,163,865**
	Destruction of N2O Gas		1,413,175	2,750,690	4,163,865
Spain				**33,550**	**33,550**
	Destruction of N2O Gas			33,550	33,550
	Total	**846,242**	**7,484,376**	**14,564,371**	**22,894,989**

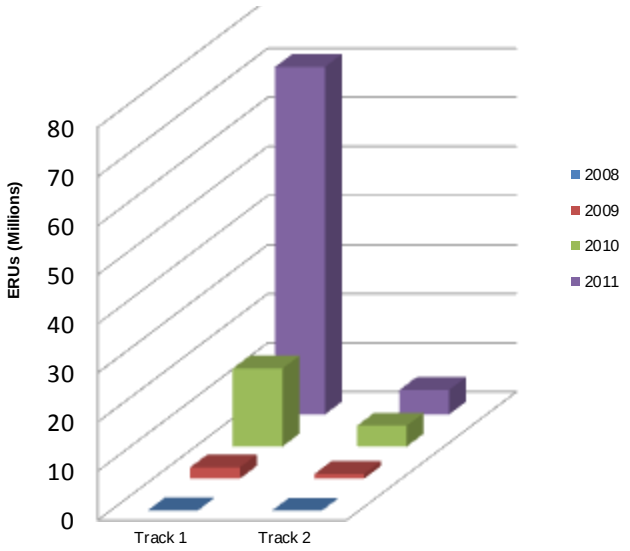
It's worth noting a large majority of the JI credits coming from within the EU have come from N2O installations. This will no longer be possible[49] in Phase III as installations emitting nitrous oxide (N2O) from the production of nitric, adipic, glyoxal, glyoxylic acid, will be included under the EU ETS caps.

Two Tracks

There are two kinds of JI projects commonly referred to as Track 1 and Track 2. This stems from the two ways a JI project can be verified. **Track 1** applies when a host country meets the JI eligibility requirements as set by the UNFCCC. The eligibility requirements include:

- the host country is a Party to the Kyoto Protocol;
- having in place a national system for the estimation of anthropogenic emissions;
- has submitted annually the most recent required inventory;
- having established the nation's emissions to be issued as Kyoto AAUs.

Figure 8: **Track 1 Vs Track 2 ERUs surrendered 2008 to 2011**



If these requirements are met the host party is able to implement 'simplified' JI and thus verify its own emissions reductions according to its own rules. In practical terms this means any country implementing Track 1 JI projects, such as Russia or the Ukraine, can set its own baseline and issues and issue credits accordingly

Track 2 applies when the host country does not meet the criteria to verify its own emissions reductions. Projects must consequently be assessed according to procedures administered by the JI Supervisory Committee (JISC). The involvement of the JISC means that Track 2 projects are similar to CDM projects in that they must be verified by a third party. In the process of doing so the relevant project documentation is made available on the UNFCCC website.

Another report funded by the Commission[50] looking at Track 1 JI projects raised concerns over the lack of consistency between different national procedures and methodologies and variable transparency of decision making processes.

If the JI is to have a future, given the issues that have been raised, it would seem sensible to reform it so that it more closely mirrors the CDM by removing Track 1 and making all projects go through an independent international accreditation agency.

Top 10 projects

As with the CDM, credits from JI projects are not only dominated by a limited number of countries, a small handful of projects dominate too. Table 5 below shows the top 10 JI

[49] See Linking Directive Art. 11b(2)
[50] Alessi, M. Fujiwara, N. (2010) 'Study on the Integrity of the Clean Development Mechanism', *AEA (Briefing paper "JI Track 1)*. [Online] Available at: http://ec.europa.eu/clima/policies/ets/linking/docs/ji_track_en.pdf

project surrendering credits into the EU ETS, currently 50% of all ERUs entering the EU ETS come from just 10 JI projects. The yearly breakdown of credits surrendered highlights the sudden growth in the number of ERUs being using in the EU ETS.

Table 5: Top 10 JI projects surrendering ERUs into the EU ETS

Project Type	JI Project Title	JI ID	Track	Host Country	2008	2009	2010	2011	ERUs surrendered from 2008-2011	% share of total ERUs surrendered (08-11)
Destruction of HFC Gas	Co-destruction of HFC23 and SF6 at KCKK Polimer plant	1000201	1	Russia			1,250,213	9,405,746	10,655,959	10.7
Destruction of HFC Gas	HFC-23 destruction at JSC, Halogen, Perm	1000202	1	Russia			1,547,039	7,798,059	9,345,098	9.4
Destruction of HFC Gas	SF6 destruction at JSC "HaloPolymer Perm"	1000309	1	Russia				7,353,382	7,353,382	7.4
Destruction of N2O Gas	Joint Implementation project aimed at N2O emissions at 3 nitric acid production plants of Azomures SA	2000024	2	Romania			1,413,175	2,486,930	3,900,105	3.9
Gas Recovery and Utilization	Reduction of Methane Leakage at Flanged, Threaded Joints and shut-down Devices of the Equipment of OJSC "Kyivgas"	1000175	1	Ukraine			2,466,837	1,426,624	3,893,461	3.9
Industrial Energy Efficiency	Reduction of Greenhouse Gases Emissions by Gasification of Odesa Region	1000284	1	Ukraine				3,230,725	3,230,725	3.3
Metal production	Revamping of Sintering and Blast-Furnace Production at OJSC "Alchevsk Iron and Steel Works"	1000262	1	Ukraine	351	362	363	3,083,510	3,084,586	3.1
Destruction of N2O Gas	Catalytic Reduction of N2O inside the Ammonia Burners of the Nitric Acid Plant in PuÅ‚awy, Poland	1000055	1	Poland			1,350,488	1,450,295	2,800,783	2.8
Destruction of N2O Gas	N2O emissions reduction project at Zak ady Azotowe Anwil S.A	1000054	1	Poland		2,186	63,361	2,704,765	2,770,312	2.8
Destruction of N2O Gas	Réduction des émissions de N2O dans les l'installation de production d'Acide Adipique de l'usine de Chalampé	1000049	1	France		110,651	1,142,523	1,477,587	2,730,761	2.8
	Total								**49,765,172**	**50.2**

Quality of Projects

The majority of concerns surrounding JI credits have centred on those credits coming from Track 1 projects and its unilateral accreditation process, meaning host countries are able to verify their own emissions reductions and issue credits accordingly. This gives raise to the fear of "hot air laundering"[51], where countries with large AAU surpluses accelerate Track 1 credit issuance in order to utilise the large surplus. In a report commissioned by the Commission on Track 1 JI, major problems were highlighted including: additionality of projects, reliability of national procedures to set methodologies, lack of coherence of the different national procedures, transparency and access to information[52]. As Figure 8 above clearly shows the majority of ERUs coming into the EU ETS have come from Track 1 projects. This number is set to increase as concern surrounding the eligibility of ERUs heightens. This concern is driven to the fact post 2012 ERU eligibility is dependent on the host country being a signatory to a second commitment period of the Kyoto Protocol, or presumably having comparable quantified emission limitation or reduction commitments (QELRCs).

[51] Kollmuss, A. (2012) 'A discussion about Surplus AAUs', *CDM Watch*. [Online] Available at: http://www.cdm-watch.org/wordpress/wp-content/uploads/2012/05/CAN-E_workshop_AAUs_April2012.pdf
[52] Alessi, M. Fujiwara, N. (2010) op cit.

Further concerns are reserved for the project type. The gigantic jump in ERUs being surrendered into the EU ETS in 2011 has predominantly come from industrial gas projects in Russia. This new source of supply of HFC23 credits is set to exacerbate the high supply of low cost offsets used for compliance in 2012 as installations rush to submit them before they become ineligible in 2013.

The future use of ERUs post 2013 is uncertain as the EC is currently considering banning ERUs[53] issued after 2012 from regions without binding emissions targets in an effort to encourage countries to join the EU in signing up to a successor trading period, extending the Kyoto Protocol which comes to an end at the end of 2012.

[53] Neslen, A. (23/10/2012) 'Brussels pitches ban on Kyoto-era credits, *EurActiv.* [Online] Available at: http://www.euractiv.com/climate-environment/brussels-proposes-ban-kyoto-era-news-515573

3. Company Level Analysis

All companies operating installations which fall under the provisions of the EU ETS have the legal right to buy and surrender offsets as a way of meeting their emissions reduction objectives. The quantity of offsets they are allowed to use varies between Member States in Phase II, with some allowing for a more generous use than others. For example Germany allows companies to use up to 22% of their allocation per year on offsets, compared to only 8% allowed by the UK. The EU ETS Directive sets a minimum level of 11%, which means those installations in Member States where the allowance is below this threshold will be entitled to make up the difference in Phase III.

While all companies are able to use offsets there is varying capacity to engage with the trading element of the carbon market, smaller installations with adequate allocations for example are less likely to utilise their offset limits due to perhaps limited capacity or high transaction costs. Table 6 below shows the top 10 companies using offsets from 2008 to 2011. The majority are power companies who face the greatest shortage of allowances under the scheme. Many of the big power companies, such as ENEL and Vattenfall, have invested directly in their own offset projects in developing countries, making them primary originators of credits.

This behaviour is not limited to power companies; energy intensive companies similarly generate credits through primary origination. Despite some of these companies having a surplus of allowances at this stage in the EU ETS, this has not prevented them from making use of their offset allowance extensively. Some companies have benefited from investing in offsets from within their own installations both inside and outside of the EU, such as ArcelorMittal and Rhodia. ArcelorMittal is generating ERUs from a JI energy efficiency project in its OJSC ArcelorMittal steel mill in Ukraine, to use those credits towards its emissions reduction obligations in the EU installations. Similarly Rhodia has a number of offsetting projects in its plants, the credits of which are utilised by the company's other installations for EU ETS compliance. Most startling is Rhodia's CDM project in its Oasan plant in South Korea, which has seen 47m CERs - or 10% of all CERs to date - be surrendered into the EU ETS.

The current oversupply of allowances in the EU ETS has meant that the justification for using offsets as supplemental to domestic action is hard to sustain. Some companies have utilised a steady supply of offsets from the outset of Phase II, while others, such as ArcelorMittal, have seen a rapid increase in offset usage in 2011.

Table 6: Top 10 Companies surrendering offsets into the EU ETS

Company	Type	2008	2009	2010	2011	Total	Grand Total
ENEL	CERs	13,139,934	5,485,120	5,607,792	9,391,395	33,624,241	34,644,952
	ERUs		103,267	917,444		1,020,711	
ArcelorMittal	CERs	2,385	2,652	2,385	25,090,283	25,097,705	29,125,094
	ERUs		39,296	19,782	3,968,311	4,027,389	
PGE Polska Grupa Energetyczna	CERs	2,108,396	6,195,285	6,518,127	4,747,918	19,569,726	20,910,811
	ERUs			627,000	714,085	1,341,085	
E.ON	CERs	3,137,316	2,010,150	6,680,052	4,190,320	16,017,838	18,362,461
	ERUs		208,750	95,231	2,040,642	2,344,623	

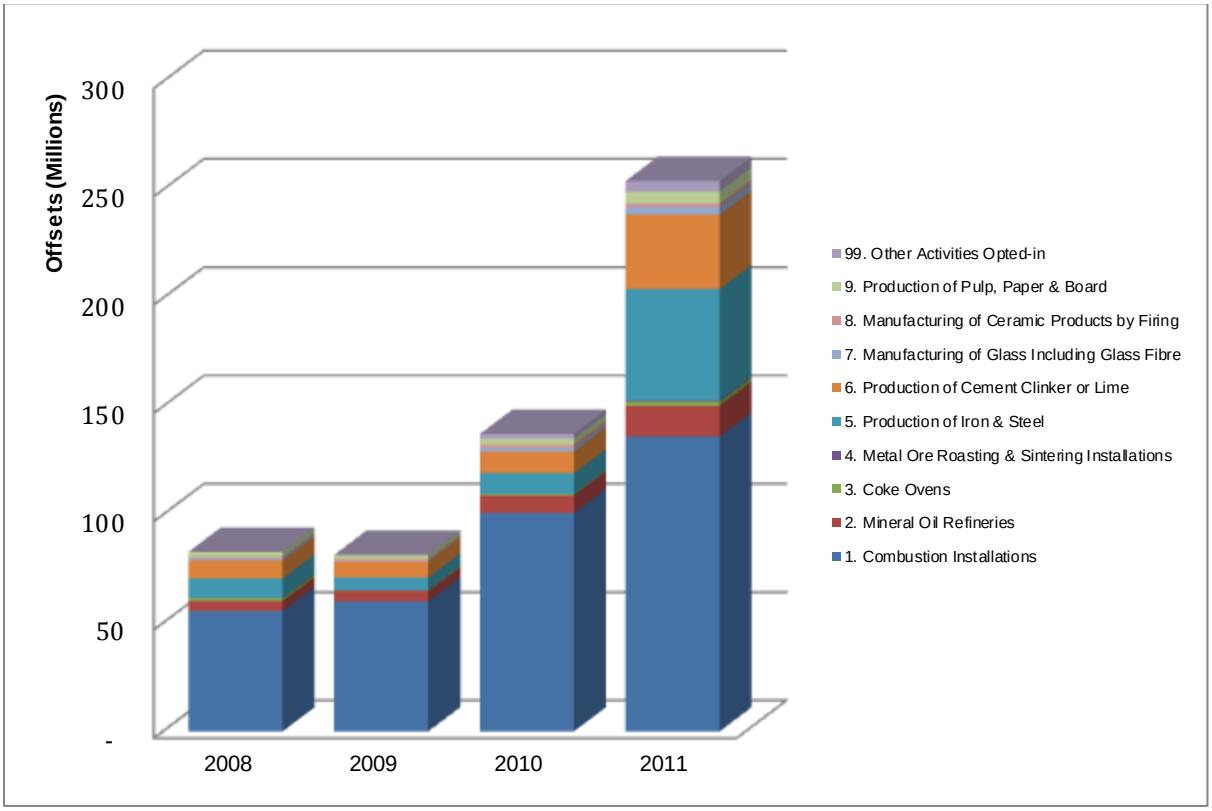
RWE	**CERs**	**1,063,761**	**5,438,977**	**5,483,121**	**3,728,603**	**15,714,462**	16,779,345
	ERUs			**342,788**	**722,095**	**1,064,883**	
Edison	**CERs**	**2,375,589**	**575,185**	**5,162,028**	**2,798,082**	**10,910,884**	13,448,732
	ERUs		**187,848**		**2,350,000**	**2,537,848**	
ThyssenKrupp	**CERs**	**5,106,872**	**356,614**	**211,850**	**211,928**	**5,887,264**	12,776,306
	ERUs				**6,889,042**	**6,889,042**	
Vattenfall	**CERs**	**1,190,097**	**6,763,765**	**2,957,716**	**1,714,626**	**12,626,204**	12,670,197
	ERUs			**27,622**	**16,371**	**43,993**	
Evonik Industries	**CERs**	**606,463**	**393,596**	**4,248,767**	**4,673,319**	**9,922,145**	12,023,609
	ERUs				**2,101,464**	**2,101,464**	
Lafarge	**CERs**			**4,778**	**11,278,220**	**11,282,998**	11,283,114
	ERUs			**116**		**116**	
Total	**CERs**	**28,730,813**	**27,221,344**	**36,876,616**	**67,824,694**	**160,653,467**	**182,024,621**
	ERUs	**-**	**539,161**	**2,029,983**	**18,802,010**	**21,371,154**	

4. Sector Level Analysis

Offset usage by EU ETS sectors

According to the EU transaction log (EUTL), there are ten economic sectors, these can be seen in Figure 9 below, with each sector being relatively self-explanatory. Sector 99 is a miscellaneous category which is used for opted-in installations and includes hospitals and universities. Though not particularly detailed they do enable us to establish a good overview of how different sectors are engaging with offsetting. Figure 9 shows the breakdown of EU ETS sectors using offsets for compliance. Combustion installations – i.e. the power sector – are overwhelmingly the largest user of offsets and account for 63%, or around 352m, of all offsets surrendered from 2008 to 2011.

Figure 9: Offset usage by economic sector



As the power sector has the most stringent cap on its emissions it is unsurprising that they have used the greatest proportion of offsets. In 2011 the power sector increase its offset use by 35%, a relatively low increase compared to other sectors. The biggest increases were seen in the Metal Ore. Iron and Steel and Cement sectors which experienced increases of 297%, 437% and 246% respectively compared to 2010 figures.

All offset usage is within limits set by Member States with some, such as the UK, Finland and Italy differentiating between energy and industrial offset allowances. Table 7 shows the number of offsets surrendered in 2011 as a percentage of emissions and allocations. The power sector used the greatest number of offsets by volume, but as a percentage of allocations and emissions their usage is smaller than most industrial sectors. For example, the Iron and Steel sector offset 45% of their emissions in 2011. This seems a particularly high percentage given the sector had a surplus of 73m allowances in 2011. In this instance

it's questionable it offsets were really needed. However, such practices demonstrate that sectors are quickly adapting to participation in the ETS and adopting trading practices that maximise their ability to profit from the scheme.

Table 7: Offsets surrendered by sector as% of emissions and Allowances

CITL Sector Code	2011 Emissions	2011 Allocation	2011 Offsets Surrendered	Offset as % of 2011 emissions	Offset as % of 2011 allocation
1. Combustion Installations	1,378,656,457	1,301,654,584	136,156,234	10	10
2. Mineral Oil Refineries	142,269,325	157,991,047	14,155,475	10	9
3. Coke Ovens	19,473,182	22,804,727	2,071,961	11	9
4. Metal Ore Roasting & Sintering Installations	13,148,876	22,051,269	441,364	3	2
5. Production of Iron & Steel	113,496,619	186,634,139	51,293,182	45	27
6. Production of Cement Clinker or Lime	152,299,862	215,329,976	34,427,058	23	16
7. Manufacturing of Glass Including Glass Fibre	20,827,993	26,391,889	3,470,585	17	13
8. Manufacturing of Ceramic Products by Firing	9,021,794	18,797,304	1,612,171	18	9
9. Production of Pulp, Paper & Board	29,055,081	40,779,134	5,652,099	19	14
99. Other Activities Opted-in	25,249,527	24,217,729	4,792,498	19	20
Grand Total	1,903,498,716	2,016,651,798	254,072,627	13	13

International competitiveness

In previous reports Sandbag has looked at the a direct competitive distortion that is taking place in the form of offsets generated from energy intensive industries in developing countries being surrendered by companies in competing sectors in the EU. This is in effect acting like a subsidy and handing an advantage to the EU's competitors. Using offsets from competitive rivals in developing countries is perfectly legal, and companies could be more inclined to buy credits from industries that they are familiar with since they understand the processes involved and abatement potential. Equally companies may be buying offsetting from exchanges without realising where they originated.

The Commission has looked into competitive distortions caused by the CDM, a report it commissioned found that no carbon leakage occurs from CDM projects[54]. It concluded that:

> There is little evidence of significant cost or profit advantages or carbon leakage due to the CDM projects in steel, cement, and aluminium sectors. It finds limited financial incentive for increased production, as the CDM projects typical provide only small improvements in carbon intensity[55].

Despite this conclusion Sandbag nevertheless believes it is important to highlight this paradox, especially given the increasing number of credits being used from competitive rivals, for example, there has been a fourfold increase in the number of steel offsets surrendered by EU steel companies from 2010 to 2011. Table 8 details the top five steel companies using steel credits and the year surrendered. Likewise, Table 9 details the top 5 cement companies using cement credits and the year surrendered. See Annex II for a full project breakdown.

[54] Erickson, P. Lazarus, M. Chandler, C. Egenhofer, C. (2011) op cit.
[55] Ruthner, L. et al. (2011) op cit.

Table 8:

Company	Steel Credittype	2008	2009	2010	2011	Total	Grand Total
ThyssenKrupp	CERs	375,000	21,768			396,768	510,102
	ERUs				113,334	113,334	
ArcelorMittal	CERs				147,694	147,694	460,769
	ERUs				313,075	313,075	
US Steel	CERs	210,000		63,257		273,257	273,257
	ERUs						
Salzgitter	CERs				63,711	63,711	208,416
	ERUs				144,705	144,705	
Tata Steel	CERs			71,707		71,707	71,707
	ERUs						
Total	CERs	585,000	21,768	134,964	211,405	953,137	**1,524,251**
	ERUs	-	-	-	571,114	571,114	

Table 9:

Company	Cement credittype	2008	2009	2010	2011	Total
Lafarge	CERs				181,425	181,425
HeidelbergCement	CERs	101,314				101,314
Miebach Gruppe	CERs				65,813	65,813
Colacem	CERs		59,756			59,756
Italcementi	CERs			37,867		37,867
Total	CERs	101,314	59,756	37,867	247,238	**446,175**

5. Country Level Analysis

Each Member State has set its own allowance for the use of offsets within Phase II of the EU ETS via its NAP. As previously mentioned this allowance varies among Member States, with larger economies generally allowing for more offsets to be used. A full breakdown of Member State offset allowances can be found in Table 10 below, as well as the percentage of offsets used in 2011 in relation to Member State emissions and allocations.

Despite annual limits on the number offsets allowed many Member States have utilised banking and borrowing provisional, meaning their offset usage is higher than their annual limit. Bulgaria, for example, offset 27% of its emissions in 2011, double its NAP limit of 12.6%.Others, such as the Netherlands, used far less than their annual limit.

Table 10: Member State offset allowances

Country	Sum of 2011 Emissions	Sum of 2011 Allocations	2011 Offsets Surrendered	Offsets as % of 2011 Emissions	Offsets as % of 2011 Allocation	Annual JI/CDM limit in %
Austria	30,598,343	33,210,163	1,990,893	7	6	10
Belgium	46,203,055	56,452,832	6,230,708	13	11	8.4
Bulgaria	39,997,027	41,504,056	10,709,156	27	26	12.6
Cyprus	4,599,381	5,837,282	-	0	0	10
Czech Rep.	74,185,514	86,484,000	6,301,705	8	7	10
Germany	450,383,122	400,883,951	74,727,881	17	19	22
Denmark	21,465,658	23,908,972	2,832,198	13	12	17
Estonia	14,809,461	15,948,312	157,589	1	1	10[56]
Spain	132,666,665	150,714,023	27,436,909	21	18	20.6
Finland	35,083,373	37,994,240	3,605,492	10	9	10
France	104,834,253	139,777,335	27,519,360	26	20	13.5
United Kingdom	220,879,200	223,338,145	15,970,948	7	7	8
Greece	58,837,630	66,014,147	10,182,402	17	15	9
Hungary	22,469,975	24,958,258	1,964,477	9	8	10
Ireland	15,769,601	21,564,538	1,957,662	12	9	10
Italy	189,749,747	194,904,026	19,603,417	10	10	15
Lithuania	5,606,425	8,037,268	1,491,660	27	19	20
Luxembourg	2,052,211	2,488,229	241,732	12	10	10
Latvia	2,923,455	4,400,929	75,531	3	2	10
Malta	1,931,566	2,168,005	-	0	0	10
Netherlands	79,966,668	88,831,673	3,530,804	4	4	10
Norway	19,189,440	8,422,612	2,256,859	27	12	13
Poland	203,026,525	207,197,398	24,796,130	12	12	10
Portugal	25,010,518	33,241,585	2,990,462	12	9	10
Romania	51,211,056	74,813,867	3,965,763	8	5	10
Sweden	19,831,761	22,729,814	1,614,284	8	7	10
Slovenia	7,994,552	8,208,974	796,944	10	10	15.8
Slovakia	22,222,534	32,617,164	1,121,661	5	3	7
Grand Total	1,903,498,716	2,016,651,798	254,072,627	13	13	

[56] Estonia originally has a 0% offset limit, however, an amended Estonian NAP was published in September 2011, allowing the use of CERs/ERUs for Estonian installations in 2011 and 2012 for up to 10% of their allocation. See: http://www.envir.ee/orb.aw/class=file/action=preview/id=1174608/NAP_2008_2012.pdf

6. Looking To The Future

Allowing EU companies to use offset for EU ETS compliance was primarily intended as a price containment mechanism, offering access to cheaper forms of abatement that would help to bring the overall price of carbon down. Furthermore, it demonstrated the EU's support for the flexible mechanisms of the Kyoto Protocol which funnel investment to developing countries. The EU's preference was, and still is, for a global climate agreement with an international emissions trading scheme. In supporting the CDM it found a way to help to meet its own targets in a cost effective way while developing countries gain experience with the concept of the carbon markets and the ability to profit from investing in emissions abatement activities.

The EU never intended that emissions trading would happen in isolation. Originally it was envisaged that numerous other countries would develop their own schemes and that this would assist in the development of an international climate agreement. This scenario yet to materialised and although emissions trading has been taken up in other countries and regions, we are a long way from a truly global carbon market. The EU nevertheless remains committed to the policy and has made adjustments to account for the lack of an international agreement post 2012.

The limiting of offsets to LDCs is one way the EU is sending a signal to encourage the agreement of the global deal. The subtext is, if we all go forward together then we will re-open the market to the widest possible participation but if we are going alone we will restrict where we send our money. This position was reinforced with the recent announcement that the EU will link with Australia's ETS - the desire to support and increase the number of countries following the EU lead is clear.

In spite of the EU desire for a global ETS the reality is we are far away from this point. In the meantime, the question around offset allowances in the EU ETS will persist. Existing provisions in the EU ETS Directive means there are opportunities for new forms of credits to enter the market in Phase III. Broadly speaking there is two near term realistic options in terms of new supply for the EU ETS: bilateral agreements and community/domestic offsets. Another possible source of supply - although we believe this to be more of a long term option - could come from the decision for new market mechanisms (NMMs) which came out of the UNFCCC meeting in Durban. NMMs are essentially scaled up UNFCCC flexible mechanism which, unlike current mechanisms (CDM and JI), would seek to deliver a net reduction in emissions themselves[57].

Bilateral Agreements

In the absence of an international climate increased focus has been placed on developing bilateral agreements with other countries. Such agreements are principally envisaged by the Commission to be a product of continued Member State outreach on climate policy, explaining the EU's position on carbon markets, as well as sharing lessons learnt from emissions trading and offsetting[58]. A number of Member States, including the UK and Germany, have active bilateral projects which encompass emissions trading in some form, for example, the UK through its Prosperity Fund projects, and Germany through its

[57] Bolscher, H. et al. (2011) 'Design options for sectoral carbon market mechanisms and their implications for the EU ETS', *Ecorys for European Commission.* [Online] Available at: http://ec.europa.eu/clima/policies/ets/linking/docs/study_20120831_en.pdf
[58] EU ETS Directive (13/10/2003) op cit. Article 11a(5)

international development arm, GIZ[59], have both ran, or in the process of developing, projects with a focus on emissions trading.

Given the lack of demand in the EU ETS, it is likely that the focus will be on working with countries developing national emissions trading schemes as opposed to securing access to more credit generating base line and credit projects. The announcement of a proposed link between the Australian ETS and the EU ETS is an example of how the EU wishes to see the carbon market develop, providing access to abatement in other countries through links between schemes. It will be interesting to observe whether and how the EU might negotiate something similar with South Korea which opens its own ETS in 2015 based along similar but different[60] lines to the EU ETS.

Community/Domestic offsetting

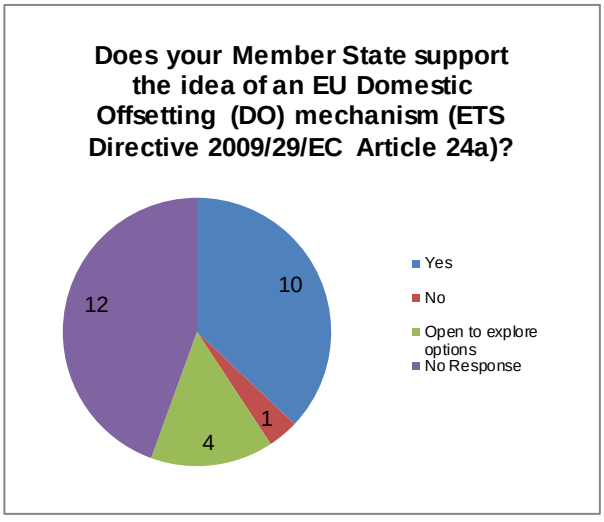
Provisions remain in the ETS Directive for the creation of a domestic or 'community offsetting' scheme. Specifically Article 24(a) of the EU ETS Directive sets out the possibility that an EU offsetting mechanism to reduce greenhouse gas emissions not covered by the ETS may be adopted.[61]

A community scheme would present unique challenges for the Commission. First and foremost there is a question of messaging. As the EU seeks to wean richer developing countries off base line and credit projects, and encourage countries to develop their own ETSs choosing to develop a community offsetting scheme may look contradictory. The Commission are themselves reluctant to consider domestic offsetting in any real depth, instead making reference to the following hierarchy of options with regards to the inclusion of additional activities and gases:[62]

1. Harmonised extension of the scope of the EU ETS
2. Unilateral extension of the scope of the EU ETS
3. Community/Domestic baseline and credit offsetting

A major concern surrounding community offsetting is the possibility of double counting which has serious implications for the environmental integrity of not only the EU ETS, but other EU environment policies. Further complications include the quantity of eligible credits that might be generated. With no quantitative limits set out in the Directive for community credits there is a real danger of the flood gates being opened to yet another source of supply that would be the final death knell for the EU ETS. The eagerness of some Member States to hold onto their surplus AAUs might be the driving force as they potentially would be able to create large numbers of credit under a community

Figure 10:



[59] Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). See: http://www.giz.de
[60] The principle difference being that the South Korean ETS will include both direct and indirect emissions.
[61] EU ETS Directive (13/10/2003) *Article 24(a)*. [Online] Available at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2003L0087:20090625:EN:HTML
[62] http://www.sandbag.org.uk/2011-09-21_EP_lunchtime_conference_on_quality_of_offsets.pptx

scheme. With an estimated surplus of 2.8bn[63] AAUs in Central Europe the Commission would need to carefully design any community scheme to remove the 'hot air' AAUs, and this may prove difficult to agree.

Despite concern from the Commission there are nevertheless a number of Member States which advocate community offsetting, see Figure 10[64], in particular central and eastern European (CEE) Member States which would likely benefit most from such a mechanism.

While there is no such thing as community offsetting projects in the EU at the moment one can get an idea of how it might work by looking at the use of JI in the EU since it is currently acting as the de facto community offsetting scheme. The flow of credits from JI projects coming into the EU ETS from EU Member States accounts for 23% of all ERUs, or 23m credits. In 2011 alone 14m ERUs were surrendered form EU Member State, representing a two fold increase on 2010 levels. ERUs have been surrendered from 11 Member States in total, with the majority originating in Poland, Germany, Romania and France.

Currently the possibility of a community scheme remains limited despite its inclusion in the EU ETS Directive. There is a real danger that any additional supply of credits from a community scheme would exacerbate the current imbalance in the EU ETS and further weaken the carbon price.

[63] Wyns, T. Kollmuss, A. (2012) op cit.
[64] Taken froma questionnaire on Domestic Offsetting conducted by Sandbag (2011).

7. Conclusion

This report clearly shows the dramatic increase in the use of offsets over the second half of Phase II of the EU ETS, reaching 13% of emissions, 254m tonnes, in 2011. This represents an 85% increase in volume compared to 2010. This increase in use of credits can be attributed to a number of factors, including low prices and the impending restriction on industrial gas credits from the EU ETS.

The offsetting budget for the EU ETS for the period 2008 to 2020 is set at around 1.6bn credits, and with 555m offsets having already been surrendered into the EU ETS, this leaves an expected one billion still to come into the market. We anticipate that in 2012 a high number of credits will be used for compliance in the rush to surrender ineligible industrial gas credits before the 1st May2013 cut off date. The net effect of high levels of offsetting use in this Phase has been to release more EUAs into an already long market, depressing prices across the board.

It is vital that all offset credits are real and additional, and do not impinge on the environmental ambition of the scheme as a whole. Offsetting is a zero sum game with regards to reducing emissions. Nevertheless, there remains a role for it within the EU ETS since the existence of large volumes of cheap abatement should give policy makers confidence in resetting the targets to deliver a higher ambition. For example, the use of offsets has allowed the EU to reduce its emissions in 2011 by 20.7% compared with 1990 levels, meaning that EU has reached its 2020 emissions reduction target eight years early. What must not happen is for offsetting to become a negative sum game, where illegitimate credits are counted toward the EU's emissions reductions.

In relation to the future use of offsetting in the ETS, Sandbag has the following recommendations:

Recommendation 1: Restore the balance of domestic abatement by withholding allowances from Phase III auctions as a prelude to their permanent cancellation via structural reforms.

Currently, the EU ETS represents the largest market for Kyoto offset credits. While the ETS Directive has placed a 1.6bn limit on the volume of credits that can be used in the scheme out to 2020, it is widely expected that supply will more than exceed that limit. Lower prices, and a desire to surrender international credits into the scheme while they remain eligible for use, will continue to ensure high levels of offsetting even while the scheme remains over-supplied with EU allowances.

We currently see little opportunity to change the legislation governing the volume of credits available in Phase II and III, instead the balance in supply and demand could be better restored by incentives and environmental ambition to the cap rather than reducing access to offsets in the medium term.

In these circumstances discussions about increasing the EU's climate ambition must take into account the high level of supply of offsets and the efficacy with which participants have worked to bring them to market for use in the scheme. It has never been clearer that the EU can afford to tighten its caps at both an EU and ETS level.

Recommendation 2: Introduce further quality restrictions via a legislative decision, scrutinising coal and large hydro projects as a priority.

The European Commission has already moved to unilaterally prohibit certain international credits from entering the EU ETS from Phase III[65], but there are still concerns about the additionality of some of the credits available to the scheme, notably coal and large hydro credits. We seriously question the appropriateness of European companies financially supporting coal power plants in India and China to enable them to continue emitting at home. Offsets effectively allow a breach of the ETS cap if their environmental additionality is not ensured.

Recommendation 3: Introduce rules which predictably alter the availability of offsets in response to prices in the EU ETS.

Beyond Phase III we would like to see the EU ETS rulebook changed to create a far more responsive policy. Elsewhere we have advocated measures which would adjust the cap down in a predictable way when exogenous policies and events reduce emissions in the traded sector[66]. We would also like to see access to offsets reflect a genuine need for price containment along similarly predetermined lines.

This price management mechanism could take the form of a price trigger that prohibits offsets from being surrendered into the EU ETS unless the EUA price passes a predetermined threshold. A similar proposal has been tabled by the European Commission in its first annual ETS report[67].

Alternatively, installations surrendering offsets for ETS compliance could be obliged to pay a levy that brings the offset price up to a pre-determined level, essentially placing a price floor on offsets for ETS usage. Revenues from that levy could then be dedicated low-carbon projects within Europe.

Either of these measures could prevent the offset price from further dragging down the EUA price when this was particularly weak.

Recommendation 4: Reserve offsetting in the long term for least developed countries. The EU should look to engage with other countries on the basis of linked emissions trading schemes, or via a global emissions trading scheme.

Offsetting through baseline and credit plays an important *transitional* role in bringing low carbon finance to developing countries that do not have mandatory climate targets, but it should ultimately be replaced by emissions trading between compliance regimes. More countries are developing plans for emissions trading and the EU has already announced it will seek to create a link between the EU ETS and the Australian ETS. International sectoral trading schemes may also be developed including in the aviation sector where there is now more momentum towards establishing an international agreement. On-going revenues from the EU ETS (or indeed the EU as a whole) might provide perverse incentives, delaying the adoption of binding targets by developing countries and therefore recommend continuing to exclude base-line and credit offsets in the EU ETS from the majority of countries. Nevertheless, post 2020 there may still be a limited role for offsets as compliance regimes may not suit all countries, in particular LDCs.

[65] i.e. the ETS will only accept credits from Least Developed Countries registered after 2012 (under Article 11a of the ETS Directive), and will no longer accept credits from HFC-23 or adipic acid N20 industrial gas destruction projects as of April 2013 (See: http://europa.eu/rapid/press-release_IP-11-56_en.htm)
[66] Morris, D. (2012) op cit.
[67] The State of the European Carbon Market 2012, http://www.sandbag.org.uk/site_media/uploads/EC_Draft_ETS_report.pdf

Recommendation 5: Do not pursue community offsetting in the short or medium term. The oversupply of allowances in the EU ETS means that any additional supply to the market is not needed. Non-traded sectors should instead be brought under the cap.

An increasing number of credits are being generated in EU Member States via the JI and surrendered into the EU ETS. However, we believe that due to the current functioning of the EU ETS there is no justification to actively seek additional options for the supply of credits to the market. A community scheme is therefore not a necessary option for the EU in the short to medium term. Only after the supply-demand balance is redressed could such a mechanism be considered, but even then it would be more effective to include non-capped sectors such as heat and transport under the cap.

Annex I Member State offsetting allowances

Member State	Annual Cap 2008-2012 in MMt CO2e	Annual JI/CDM limit in %	Annual JI/CDM limit in MMt CO2e	Banking/ Borrowing	Region/Sector differentiation Industry / Energy differentiation[68]	
Austria	30.7	10	3.1	Yes/yes		
Belgium	58.5	8.4	4.9	-	*Flanders Region: 24%	*Flanders Region: 7%
					*Walloon and Brussels regions: 4%	*Walloon and Brussels regions:8%
Bulgaria	42.3	12.6	5.3	Yes/yes		
Cyprus	5.48	10	0.5	Yes/yes		
Czech Rep.	86.8	10	8.7	Yes/yes		
Denmark	24.5	17	4.2	Yes/yes	6.50%	28.70%
Estonia	12.72	10[69]	1.3	No/no		
Finland	37.6	10	3.8	Yes/Yes	8 / 8.5%	8.5 /9.5 /23.9%
France	132.8	13.5	17.9	Yes/Yes		
Germany	453.1	22	99.7	Yes/Yes		
Greece	69.1	9	6.2	Yes/Yes		
Hungary	26.9	10	2.7	No until end 09/No		
Ireland	22.3	10	2.2	Yes/Yes	*cement:11%	11%
					*general sector: 5%	
Italy	195.8	15	29.4	Yes/no	*ferrous metal production 16.7%	*Electricity sector 19.3%
					*other sectors(Electric Furnace,Cement/Lime/Glass/Ceramics, Pulp / Paper / Cardboard) 7.2%	*refineries 13.2%
						*other combustion / gas compressors, district heating, 'other' 7.2%
Latvia	3.43	10	0.3	Yes/Yes		
Lithuania	8.8	20	1.8	No/no		
Luxembourg	2.5	10	0.3	Yes/Yes		
Malta	2.1	10	0.2	Yes/Yes		
Netherlands	85.8	10	8.6	Yes/Yes		
Norway		13		Yes/No	13% of actual emissions (rather than allocation)	
Poland	208.5	10	20.9	Yes/No		
Portugal	34.8	10	3.5	Yes/Yes		
Romania	75.9	10	7.6	Yes/Yes		
Slovakia	30.9	7	2.2	Yes/Yes		
Slovenia	8.3	15.8	1.3	Yes/Yes		
Spain	152.3	20.6	31.4	Yes/No	7.90%	42%
Sweden	22.8	10	2.3	Yes/Yes		
UK	246.2	8	19.7	Yes/No	8%	9.3%
Grand Total	2080.93	-	288.7			

[68] Sandbag is grateful to Deutsche Bank for sharing its Energy / Industry allowance breakdown.
[69] Estonia originally has a 0% offset limit, however, an amended Estonian NAP was published in September 2011, allowing the use of CERs/ERUs for Estonian installations in 2011 and 2012 for up to 10% of their allocation. See: http://www.envir.ee/orb.aw/class=file/action=preview/id=1174608/NAP_2008_2012.pdf

Annex II Detailed like sector offset usage

Project Country	Project Type	Company Offset Project Title	Credits surrendered 2,008	Credits surrendered 2,009	Credits surrendered 2,010	Credits surrendered 2,011	Total
		ArcelorMittal					
Ukraine	JI	0104. Improvement of the Energy efficiency at Energomashspetsstal (EMSS), Kramatorsk, Ukraine				15,892	15,892
Ukraine	JI	Effective Utilization of the Blast-furnace Gas and Waste Heat at the JSC â€œZaporizhstalâ€, Ukraine				25,395	25,395
Ukraine	JI	Energy Efficiency Increase in Steelmaking and Sinter Plants JSC â€œZaporizhstalâ€, Ukraine				56,719	56,719
Ukraine	JI	Energy Efficiency Investment Program at OJSC ArcelorMittal Steel Kryviy Rih				198,529	198,529
Ukraine	JI	Revamping and Modernization of the Alchevsk Steel Mill				16,540	16,540
China	CDM	Anshan Iron and Steel Group Corporation (Yingkou) Blast Furnace Gas Combined Cycle Power Plant Project				102,380	102,380
China	CDM	Ma Steel (new plant) CDQ and waste heat utilization project				45,314	45,314
		HKM					
Ukraine	JI	0104. Improvement of the Energy efficiency at Energomashspetsstal (EMSS), Kramatorsk, Ukraine				23,301	23,301
		Saarstahl AG					
Ukraine	JI	Revamping of Sintering and Blast-furnace Production at OJSC "Dniprovsky Integrated Iron and Steel Works named after Dzerzhynsky"				23,053	23,053
		Salzgitter					
Ukraine	JI	0104. Improvement of the Energy efficiency at Energomashspetsstal (EMSS), Kramatorsk, Ukraine				44,705	44,705
Russia	JI	Implementation of arc-furnace steelmaking at Magnitogorsk Iron and Steel Works				100,000	100,000
China	CDM	Anshan Iron and Steel Group Corporation (Anshan) Blast Furnace Gas Combined Cycle Power Plant Project				38,375	38,375
China	CDM	Anshan Iron and Steel Group Corporation (Yingkou) Blast Furnace Gas Combined Cycle Power Plant Project				7,364	7,364
China	CDM	Baotou Iron & Steel Blast Furnace Gas Combined Cycle Power Plant Project				15,000	15,000
China	CDM	BOG and COG Utilisation for Combined Cycle Power CDM Project in Jinan Iron & Steel Works				1,000	1,000
China	CDM	Chongqing Iron & Steel Co. Ltd. Waste Gas to Electricity Project				715	715
China	CDM	Yinshan Profiled Iron Co., Ltd. 25 MW Waste Gas Power Generation Project of Laiwu Iron & Steel Group Corp.				1,257	1,257
		Tata Steel					
Ukraine	JI	0104. Improvement of the Energy efficiency at Energomashspetsstal (EMSS), Kramatorsk, Ukraine			71,707		71,707
		ThyssenKrupp					
Ukraine	JI	Revamping of Sintering and Blast-furnace Production at OJSC "Dniprovsky Integrated Iron and Steel Works named after Dzerzhynsky"				113,334	113,334
China	CDM	BOG and COG Utilisation for Combined Cycle Power CDM Project in Jinan Iron & Steel Works		21,768			21,768
India	CDM	Generation of Electricity through combustion of waste gases from Blast furnace and Corex units at JSW Steel Limited (in JPL unit 1), at Torangallu in Karnataka, India	375,000				375,000
		BÉM Borsodi					
Ukraine	JI	Revamping of Sintering and Blast-Furnace Production at OJSC "Alchevsk Iron and Steel Works"				2,978	2,978
		The Benteler Group					
Russia	JI	Implementation of arc-furnace steelmaking at Magnitogorsk Iron and Steel Works				42,735	42,735
		Gruppo Pittini					
Ukraine	JI	Revamping of Sintering and Blast-furnace Production at OJSC "Dniprovsky Integrated Iron and Steel Works named after Dzerzhynsky"				14,000	14,000
		Georgsmarienhütte GmbH					
Russia	JI	Implementation of arc-furnace steelmaking at Magnitogorsk Iron and Steel Works				50,000	50,000
		Gruppo Beltrame					
Ukraine	JI	Revamping and Modernization of the Alchevsk Steel Mill			17,167		17,167
		Dillinger Hütte					
Ukraine	JI	Revamping of Sintering and Blast-Furnace Production at OJSC "Alchevsk Iron and Steel Works"				494,213	494,213
Ukraine	JI	Revamping of Sintering and Blast-furnace Production at OJSC "Dniprovsky Integrated Iron and Steel Works named after Dzerzhynsky"				72,997	72,997
		Dillinger Hütte					
China	CDM	Anshan Iron and Steel Group Corporation (Yingkou) Blast Furnace Gas Combined Cycle Power Plant Project			43,157		43,157
		ISD Dunaferr					
China	CDM	Anshan Iron and Steel Group Corporation (Anshan) Blast Furnace Gas Combined Cycle Power Plant Project				41,000	41,000
		Outokumpu					
China	CDM	Ma Steel (old plant) CDQ and waste heat utilization project				22,000	22,000
		Ruukki					
China	CDM	Anshan Iron and Steel Group Corporation (Yingkou) Blast Furnace Gas Combined Cycle Power Plant Project				12,347	12,347
		Saint-Gobain					
China	CDM	Anshan Iron and Steel Group Corporation (Yingkou) Blast Furnace Gas Combined Cycle Power Plant Project				26,395	26,395
		US Steel					
China	CDM	Baotou Iron & Steel Coke Dry Quenching #3 and Waste Heat Utilization for Electricity Generation Project			31,230		31,230
China	CDM	BOG and COG Utilisation for Combined Cycle Power CDM Project in Jinan Iron & Steel Works			32,027		32,027
India	CDM	Generation of Electricity through combustion of waste gases from Blast furnace and Corex units at JSW Steel Limited (in JPL unit 1), at Torangallu in Karnataka, India	210,000				210,000
		Calcinor Group					

China	CDM	Anshan Iron and Steel Group Corporation (Yingkou) Blast Furnace Gas Combined Cycle Power Plant Project				27,025	27,025
		TSW Trierer Stahlwerk GmbH					
China	CDM	Baotou Iron & Steel Blast Furnace Gas Combined Cycle Power Plant Project		15,000			15,000
		TOTAL	585,000	36,768	195,288	1,634,563	2,451,619

Project Country	Project Type	Company Offset Project Title	Credits surrendered 2,008	Credits surrendered 2,009	Credits surrendered 2,010	Credits surrendered 2,011	Total
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Ukraine	JI	0104. Improvement of the Energy efficiency at Energomashspetsstal (EMSS), Kramatorsk, Ukraine				23,301	23,301
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		Tata Steel					
Ukraine	JI	0104. Improvement of the Energy efficiency at Energomashspetsstal (EMSS), Kramatorsk, Ukraine			71,707		71,707
		ThyssenKrupp					
Ukraine	JI	Revamping of Sintering and Blast-furnace Production at OJSC "Dniprovsky Integrated Iron and Steel Works named after Dzerzhynsky"				113,334	113,334
China	CDM	BOG and COG Utilisation for Combined Cycle Power CDM Project in Jinan Iron & Steel Works		21,768			21,768
India	CDM	Generation of Electricity through combustion of waste gases from Blast furnace and Corex units at JSW Steel Limited (in JPL unit 1), at Torangallu in Karnataka, India	375,000				375,000
		BEM Borsodi					
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		Georgsmarienhütte GmbH					
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		Gruppo Beltrame					
Ukraine	JI	Revamping and Modernization of the Alchevsk Steel Mill			17,167		17,167
		Dillinger Hütte					
Ukraine	JI	Revamping of Sintering and Blast-Furnace Production at OJSC "Alchevsk Iron and Steel Works"				494,213	494,213
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China	CDM	Anshan Iron and Steel Group Corporation (Yingkou) Blast Furnace Gas Combined Cycle Power Plant Project				26,395	26,395
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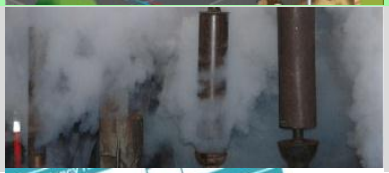
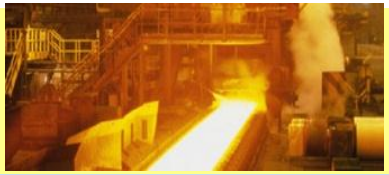
		Calcinor Group					
China	CDM	Anshan Iron and Steel Group Corporation (Yingkou) Blast Furnace Gas Combined Cycle Power Plant Project				27,025	27,025
		TSW Trierer Stahlwerk GmbH					
China	CDM	Baotou Iron & Steel Blast Furnace Gas Combined Cycle Power Plant Project		15,000			15,000
TOTAL			**585,000**	**36,768**	**195,288**	**1,634,563**	**2,451,619**

Annex III Sandbag Offset Description

UNFCCC Sectoral Scope	Scope Description	Sandbag Descriptor	Sub Category	Picture	Explanation
1	Energy industries (renew able - / non renew able sources)	Energy industry - fuel sw itching	Biomass		Biomass projects use plant based materials and residues – such as wood chips, rice husks, bagasse and sawdust - for the effective generation of electricity.
1	Energy industries (renew able - / non renew able sources)	Energy industry - renew ables	Small Hydro		Hydro power refers the harnessing of energy through the interception of water flows. Small hydro projects are classified as those projects which generate less than 20MW of power.
1	Energy industries (renew able - / non renew able sources)	Energy industry - renew ables	Large Hydro		Hydro power refers the harnessing of energy through the interception of water flows. Large hydro projects are classified as those projects which generate more than 20MW of power.
1	Energy industries (renew able - / non renew able sources)	Energy industry - renew ables	Renew able		Renewable energy is the generation of electricity from sources that are naturally replenished, e.g. by harnessing wind, sun or trial movements.
1	Energy industries (renew able - / non renew able sources)	Energy industry	Waste Gases (flue gases)		The objective of these projects is to capture waste gasses from industrial processes such as steel-making and to utilise them in a new combined cycle power plant (CCPP) specifically designed to generate electricity.
1	Energy industries (renew able - / non renew able sources)	Energy industry	Fuel Sw itch		Fuel switch projects involve changing from one carbon intensive fuel type to another less carbon intensive type – such as from oil to natural gas.

2	Energy distribution	Energy distribution	District Heating		The purpose of these project it to develop a centralised system of heat distribution for residential of commercial heating requirements.
3	Energy demand	Industrial Energy Efficiency	na		The main purpose of this project is to achieve energy efficiency improvements through the reduction of steam consumption in boilers, thereby considerably reducing the fuel consumption.
4	Manufacturing industries	Manufacturing Energy Efficiency	na		These projects focus on reducing emissions from manufacturing – such as the reduction of clinker* content in cement manufacturing which reduces direct onsite emissions and offsite emissions.
5	Chemical industries	Destruction of Industrial Gas (N2O)	na		N20 is produced as a by-product of the manufacture of Adipic acid which is used primarily as the main constituent of nylon. These projects consist of the instillation of a dedicated facility to convert at height temperatures the nitrous oxide into nitrogen.
6	Construction	Construction	na		na
7	Transport	Transport	na		These projects reduce emissions through using vehicles/transport systems that emit less greenhouse gases.
8	Mining/mineral production	Utilization of coal mine methane	na		The purpose of these projects is to capture and utilise coal mine methane. Typically project extract methane directly from coal mines to be burnt to generate power.

9	Metal Production	Metal Production	na		These projects reduce emissions through using vehicles/transport systems that emit less greenhouse gases.
10	Fugitive emissions from fuels (solid, oil and gas)	Gas Recovery and Utilization (Flaring)	na		The purpose of these projects is to recover and utilise gases produced as a by-product of oil production activities which would have otherwise been flared.
11	Fugitive emissions from production & consumption of halocarbons and sulphur hexafluoride	Destruction of Industrial Gas (HFC)	na		HFC23, a powerful greenhouse gas, is generated as a by-product in the production of HFC22 (commonly used in air conditioning / refrigeration units). Projects ensure the thermal destruction of HFC23.
12	Solvents use	Solvents	na		na
13	Waste handling and disposal	Landfill Gas	na		The purpose of these projects is to capture and burn methane produced from landfill sites.
14	Agriculture	Agriculture	na		These projects will mitigate emissions by developing a more effective animal waste management system. Including through the capture of methane from agriculture waste which can then be burnt to produce heat and/or power.