

MONTHLY CARBON STANDARD

Too much, too young



In a moment of Christmas benevolence, we welcomed the news that the Environmental Committee of the EU Parliament passed a number of resolutions that would facilitate the EC holding back a significant volume of phase 3 EUAs from the first few years of the phase. After some deeper reflection, we are now more circumspect on this as the entire concept of the set-aside raises uncomfortable issues about political interference in the EU ETS. Important in this is a realisation that much of the over-supply in the market of allowances comes initially from two separate incidental rules that were introduced for political, rather than market reasons. The first was the linking Directive, which was initially passed to provide the sort of price (and cost) containment that we are witnessing at the moment – with over 400 Mt of CERs/ERUs being issued in 2011 alone. The second was the NER300, a politically motivated subsidy mechanism that brought forward 300 Mt of phase 3 EUAs from being gradually released into the market over the 2013-20 period as new entrants appear, and concentrating most of the selling in 2012. The impact of the NER300 on the market has been dramatic as the promise of regular sales by the European Investment Bank (EIB) was certainly a green light to most traders to short the market. It was certainly an easy bet, particularly in such a weak market and the falls from 10 €/t to 7 €/t coincided with the announcement on the transfer of EUAs from the EC to the EIB and the expectation that selling had begun. So, two elements of interference in the basic workings of the market has led to further political pressure to interfere in the price mechanism as prices are now seen too low to stimulate investment. The great irony is that one of the key reasons prices are so low is a political will to encourage investment in high-cost emissions-reduction technology. But the low prices now mean the subsidy levels (revenue earned from NER 300 sales) will be too low and carbon prices insufficient to get more than one or two of the pilot CCS projects actually built. Now the set-aside concept looks likely to survive but will only likely be fully defined in the second half of this year –and then will only influence supply from 2013. Yes, prices are likely to reflect whatever value of set-aside is finally agreed at the EC/EU Parliament level, but such an impact is most likely from H2 12. With macroeconomic risks to prices still on the down-side and Q1 likely to be weak, our carbon price outlook has been written down, with EUA prices in 2012 now forecast to average 7.5 €/t and CERs to average 4 €/t.

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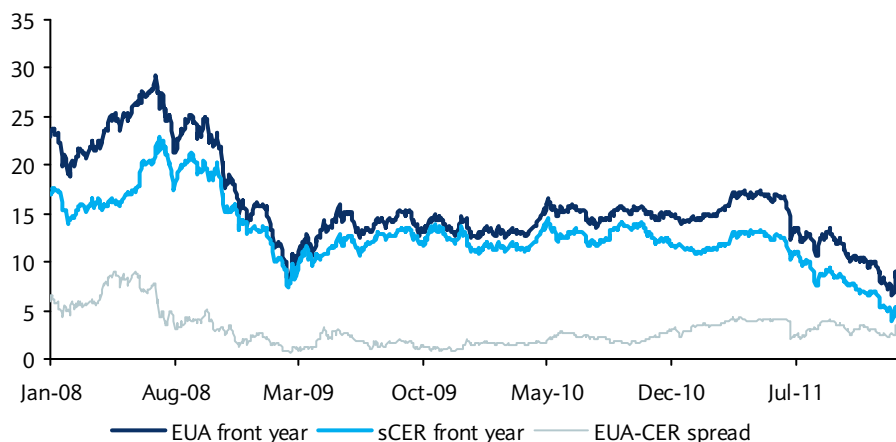
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This month, we:

- present a focus piece on 2012 and argue that most of the concerns we lived with in 2011 will be present and correct in the coming year. Macroeconomic risks are still biased to the downside, as a European recession remains more likely than a robust return to growth. Oversupply will still be an issue with CER issuance still likely to be over 300 Mt and ERUs likely to be issued in haste. The wheels of the NER300 will keep rolling, with at least 200 Mt being sold in 2012. The desire for forward hedging by the utilities will be higher as many more 2013 positions need to be closed, along with more 2014 and some 2015 positions. So, potentially, a better balance, but too much carbon is in the market and it remains hard to see much upside for prices from current levels; and
- revise down our forecasts for EUAs and CERs in light of the deterioration in outlook for GDP and industrial production (IP) across Europe. With real GDP growth for Europe down from modest growth of 0.4% in 2012 to a recessionary -0.2% and IP to fall by 2.9% (down from the 2% fall forecast in November), we have written down all of our EUA and CER forecasts across the curve. The main reason for the sustained lower prices we see at the moment is that the market is now structurally so long carbon and this level of inventory will keep prices lower for longer. With the 20% cap looking like it will still persist at the start of the phase and with the level of set-aside likely to be around the 400-700 Mt level, this suggests that prices will struggle to see any upside in 2012, and will only gradually creep upwards in the post-2012 period as the set-aside is felt and the supply of offsets starts to reduce. We are now forecasting EUA prices of 7.5 €/t for 2012 (down from 12 €/t, a 37% reduction), 12 €/t in 2013 (down 20% from 15 €/t) and 18 €/t average for phase 3 (down 18% from 22 €/t).

Figure 1: Phase 2 (front year) (€/t CO₂) – ups and downs



Source: ECX, Barclays Capital

Price outlook: Future prospects – when will we see 10 €/t again?

Figure 2: Carbon price outlook

Contract (€/t CO ₂)	2008A	2009A	2010A	2011	H1 12	H2 12	2013	2014	Phase 3 (13-20)
EUA	22.6	13.4	14.5	13.4	7	8	12	14	18
CER	17.4	11.8	12.4	10.2	4	4	7	7	10
EUA-CER spread	5.2	1.6	2.1	3.2	3	4	5	7	8

Note: CER forecasts are for EC-compliant CERs. Source: Barclays Capital

Figure 3: Price drivers and risks

Drivers	Discussion
EUA demand Power sector – fuel switching costs	The over-riding themes on European energy over the second half of 2011 has been downside macroeconomic gloom and the warm weather, which helped keep energy prices flat or falling. Brent crude oil prices ended the year back around the 110 \$/bbl level mean, which is the mean they seemingly have been reverting back to for a while, with geopolitical supply risks in major exporters providing upside while basic fundamentals suggesting little downside in terms of global demand. European coal prices (Cif ARA) had a long slow slide to below the 110 \$/t level with the warm start to the northern hemisphere winter having a demand-reducing effect on the market. With port inventories of coal still high, such prices have started to tumble and this should continue to keep coal in the merit order in European power. European forward gas prices have been heavily influenced by the warm Q4 11, with the UK seeing storage levels remaining high and LNG supply resilient, allowing prices to drift off over the quarter. However, with carbon falling, gas-fired power generation still remains largely out of merit despite the healthy supply balance. German dark power spreads remained resilient with the 2012 spreads ending the month around the 12 €/t and 2013 up above the 10 €/t level. The positive spread levels should continue to drive good hedging of future power spreads.
EUA demand Industrial growth	Total industrial production across the EU-27 is up by 5.7% over the first ten months of 2011, although most indicators are suggesting that Q4 is going to be softer. Our forecast industrial production numbers for 2011 closed the year unchanged at 3.5%, but the outlook has been written down for 2012 from -2% to -2.9% in 2012 (real terms), and for the recession in IP to continue in 2013 (a -0.9%). The European sovereign debt crisis remains far from being resolved, and the risks will weigh on the market for the months to come and a deeper recession in Europe remains a significant down-side risk for the market. With CDS having started to deteriorate (from around an average 170 basis points in May to over x00 basis points in December), the spur for larger proportions of industrial length to come to market is increasing.
EUA supply Issuance	Sales of unallocated NERs has commenced, with the UK having sold 27.2 Mt in 2011, with 5.2 Mt being from the NER, while Greece has started selling 10 Mt of unallocated phase 2 NER. We estimate that EUAs sold by sovereigns in the market in 2011 was 98 Mt and that another 107 Mt may be sold in 2012. We note that there is uncertainty over both the total volume of NER that will remain unallocated and the volume that will be cancelled rather than being sold. The beginning of December saw the EC transfer the first volumes of the NER300 to the EIB and the market expectation is that it has started selling. The lack of transparency of the sales process is a concern but we expect that no more than 20 Mt was sold in 2011 while another 220 Mt will be sold in 2012 and 60 Mt in Q1 13.
CERs	Over 2011, CER issuance was 319 Mt, 141% more than the 132 Mt seen in 2010. We have reduced our CER forecasts for issuance in 2012 to 320 Mt (from 350 Mt due to the impact of low prices), implying monthly expected issuance of just over 26 Mt. With registration remaining high over 2011 with 1024 projects registered (up 44% y/y), we expect issuance in the period 2008-2012 to be 1135 Mt and supply to be 1250.
ERU/AAU	Over 2011, the JI saw 105 new projects being determined. Determined JI projects now can deliver just over 296 Mt of ERUs in the period out to 2012 (not risk adjusted) while the issuance of ERUs has risen to 116 Mt. We have retained our JI supply forecast at 350 Mt, which assumes that the increase in Russian activity seen in the JI in 2011 continues through 2012. The end of the year saw little activity for AAU sales with prices reported in Point Carbon as falling down to the 2-4 €/t level, having been pressured downwards by the fall in CER prices.
Post-2012 expectations	<p>2011 ended with a reasonably successful global climate conference (COP) in Durban. The key developments were: one, a broad agreement by a group of countries (basically the EEZ and some other eastern European states) to a second compliance period under the Kyoto Protocol. Two, all other major emitters agreeing a roadmap to a comprehensive agreement on climate change by 2015, with ratification to allow the start of compliance by 2018 or 2020. The first agreement was probably more important immediately for the market as it broadly assured the continuation of the KP's flexible mechanisms beyond 2012. There remains an issue as to what this might mean for the use of CERs/ERUs under the KP, both whether this would be seen as an international agreement and whether the clause on the international agreement on post-2012 restrictions is an additional restriction (so another layer of reduction) or an alternative restriction (meaning it replaces the other restrictions). The EC informed us it was seeking legal clarity on these issues, although the potential requirement to ratify the agreement by 1 January 2013 has significant implications for the volume of CERs that could be eligible in 2013. Other areas of note were passed in Durban, including steps to operationalise the green climate fund (GCF), the sovereign-financed fund to be used for mitigation and adaption financing in the developing world. The carbon market was indifferent to the developments, shedding around 1 €/t in the week following the conference.</p> <p>Other key events in the last quarter of 2011 included the passing of the (largely) final rules for the Quebec cap-and-trade system, that paves the way for the start of compliance trading in January 2013. This accompanies the passing of the final rules under the California cap-and-trade system, which will also start in January 2013; and the passing of the climate bill through the Australian senate that paves the way for the start of a fixed-price period in 2012 and then transitioning to a cap-and-trade scheme in 2015.</p> <p>The success of both of these measures does show that some progress on climate legislation can be made in what are testing economic times.</p>

Source: Barclays Capital

CARBON FOCUS: REVIEW AND PREVIEW

Then and now: 2011 reviewed, 2012 previewed

2011 reviewed: hope and gloomy

A year of two halves...

What a year 2011 turned out to be, a year of two halves. Front-year EUAs hit a three-year high at 17.42 €/t in May, before seeing it all disappear with the Dec 11 contract expiring at 7 €/t – a 50% reduction in value from the start of the year and a 60% reduction from the peak. Seven lessons we learned, or re-learned, amongst all of this acute volatility were:

- **The carbon market has enormous exposure to the European economy.** The story of the second half of the year is that the sovereign debt crisis that blighted the eurozone was instrumental in reducing the carbon price. The first time around, back in 2008-09 when the global recession led to a 15% y/y reduction in IP and an 11% reduction in emissions, the carbon market was resilient. In that episode, the market only stayed below 11 €/t for some 21 trading days. By the end of 2011, prices had stayed below 11 €/t for 67 trading days as this time the market is much longer carbon. With prospects for IP being written down and sovereign debt issues still seeming unresolved, the response of the market was simply to sell carbon off – unwind any long positions and go short. H2 11 was certainly not a time to be going long European assets, and of all the traded commodities, carbon's exposure to European economic activity was the most complete.
- **Markets are good at supply.** It does seem to come as a surprise, but yes if you let the private sector lose on something, it will create supply and this happened in spades, with the second big theme of 2011 being the surge in the supply of off-sets into the market. The CDM delivered 320 Mt of offsets, more than double the 132 Mt seen in 2010, while issued ERUs increased from 30 Mt to some 115 Mt. Between them, the offset mechanisms put almost 400 Mt of carbon into the market in 2011. The linking directive, which allowed CERs and ERUs to be eligible in the EU ETS, was agreed largely to provide some degree of price mitigation. Unfortunately, given the poor demand-side picture, this was possibly too much mitigation for many carbon market participants, particularly those providing supply.
- **Utility hedging patterns are not set in stone.** One of the missing pieces of the market in H1 11 was the acceleration in utility hedging that many expected (including us) to come from the fact the utilities receive no free allowance from 2013. In fact, utility hedging was down in H1 2011 y/y suggesting the utilities had done less, with the main reason being that dark and spark-spreads started 2011 at historically low levels. German dark-spreads for Y+2 power started the year down by around the 3 €/ MWh level, which is a long way from the spreads above 15 €/ MWh that the utilities were accustomed to. With so little downside remaining, utilities simply decided to take on the price risk, but hedging levels suffered. By H2, spreads were back to around the 10 €/ MWh level, which is much better but also provides the risk of much greater downside. Better utility hedging levels followed but they did so on the back of reduced demand as the economy began to slow down and the increasing volumes of offsets coming into the market.
- **There are no free floors in a market.** No matter how many times it happens, the fact that carbon is a market prone to episodes of heavy supply, means that it is one where price risk management is so important. With carbon being at times both the best performing (by May) and the worst performing commodity (anytime after June) in terms of asset value really says it all.

- **The point of a market seems poorly understood.** A market is just a place where buyers and sellers exchange things for a price. As such, it is good at establishing a price reflective of the scarcity of the commodity in question. Anything else that happens is then simply a function of how participants view the resulting prices. Low prices do not mean the market is fatally broken. It means the market is accurately reflecting a situation where there is more supply than demand. The current low prices in the carbon market, while uncomfortable for any unhedged long positions, is not a problem for the market. It is simply reflecting the fact that the EU 2020 goals on emissions reductions can be easily met. If anything, it is a signal to be more ambitious, particularly since the scientific consensus on this suggests more ambition is needed on targets around the world. It is also a signal to postpone investment, an issue that seems to be generating political interest.
- **Global climate change negotiations and the carbon market are distant cousins.** Although expectations were fairly low going into Durban, it actually delivered all that could be relatively expected of the discussions. It delivered a second compliance period for the Kyoto Protocol (KP), albeit with reduced participation levels. This certainly helped remove some of the legal ambiguity over the flexible mechanisms. Durban also delivered a mandate to negotiate a single agreement with some form of legal standing that would include all major emitters by 2015, to be ratified and started by no later than 2020. The market responded by falling 14% in the following week, which was not a rejection of the process but simply that the other drivers, including the start of the sale of the NER 300 by the EIB, were far more important for actual buyers and sellers of EUAs and CERs.
- **Legislation rules the carbon market.** In addition to the heavy supply and lacklustre demand, came a more active than expected policy environment. Most of the major policy moves came from the introduction of a draft energy efficiency Directive, which when it was published back in June helped spook the market by holding out further emissions reductions in the second half of this decade. The same bill then had a seasonal treat for the market when in mid-December the version voted out of the environmental committee held amendments that allowed the EC to introduce a set-aside to recalibrate the market and a 0.5% pa increase in the emission-reduction targets (around 480 Mt over the phase). This was the first bullish news in about six months for the market and led to a short-term rally that saw carbon add around 17% in the course of one morning.

2012 previewed: Another long, long year

One long year in this market ...

We are entering 2012 in a place where a year ago we did not think would be, namely with market prices being precarious and hovering around the 7 €/t level. Our seven expectations for the year ahead are that:

- **Economic behaviour is still going to be important.** At the start of 2011, our outlook for 2012 EU IP was for 1.5% growth. At the start of 2012, those numbers are now for a 2.9% y/y reduction – a c. 4.5 percentage point change over the course of the year. The reduction in carbon prices seen last year already reflected the deterioration in economic activity and a tightening of credit across the board to market participants. Such credit market tightening is especially acute in those countries which have seen a sovereign credit downgrade, and has meant an increasing number of participants have turned to the market for either cash flow (just selling) or finance. With the issues around sovereign debt still not fully resolved, the ultimate path of the economy and how it unfolds will have an important bearing on EUA prices. Expect sovereign downgrades and any other headline indications of a worsening economic situation to rest heavily on the market.

- **Price intervention looks likely.** The success of Durban followed by the vote on the energy efficiency directive in the EU Parliament's environmental committee in mid-December, which held out the promise of some form of set-aside, has raised expectations that some regulatory intervention over the cap will be forthcoming. The promise of the set-aside, in which EUAs are removed from the annual auction pot and put into an account, which may or may not be eventually cancelled, is something that did stop the carbon price slide. The progress of the set-aside clauses will be closely watched by the market with the 24 January 2012 vote in the industrial committee being the first key date. Expect the set-aside to be pushed by the Danish Presidency of the EU over the first half of the year, although some push back from some member states is also something that has to be expected. The key debate here is over economic growth and many compliance entities will argue that high carbon prices could just push some industry out of the EU – so we should expect a debate on the merit of these issues.
- **Offset supply will stay high.** While CER prices are still languishing at levels around 4 €/t, the issue is just how many CERs are going to come into the market this year. Our expectation is while there will be an attempt to reduce the volume of issuance by the project aggregators, there will be some limits to this as the projects will still be undertaking the emissions reductions since variable costs of abatement tend to be low. So, the best that can happen is to delay the issuance process until 2013, and then these CERs will probably come to market. Apart from that, HFC-23 and N2O still need to come onto the market next year, with their limitation for eligibility coming into force on 1 May 2013. Given this, we expect another 320 Mt of CER issuance this year (flat y/y) and another 120 Mt of ERU issuance under the JI. Another 440 Mt of supply will sit heavily on the market.
- **Expect IT delays.** One of the things market participants have learned to live with is delays to the introduction of some of the necessary IT market architecture. The major ones to be delivered in 2012 are the centralised registry, which is needed for phase 3 EUAs to be delivered, and the centralised auction platform, which is needed to facilitate the centralised sales of phase 3 EUAs. Neither of these look ready to be on time, with the estimated time of arrival for the registry already pushed back to the beginning of H2 2012 and that it is now looking an ambitious timeframe for the centralised platform. The key impact is on the 120 Mt of allowances that the EC were intending to sell in 2012 as early hedges, with that full volume looking suspect. The 120 Mt is effectively a 10 Mt per month level, and it is possible that every month of delay sees that total reduced by that amount. With a good following wind needed to deliver both processes by September, a volume of maybe 40 Mt of that total looks likely, in our view.
- **Volatile, it will be.** The high levels of carbon market volatility seen last year are likely to moderate, although volatility will stay with us through 2012 as there are a number of events that will be important for the market in the coming year. Important in this has been the impact that current risk management policies has on price movements, with a good price movement in a contrary direction to the prevailing sentiment almost always now triggering stop losses and accelerating the price movements. The triggering of stop losses accelerated the price falls in June and was again important in the price rise seen late in December. With auction timing, macro news and issues around the set-aside all still going to be in the mix, the recipe is there for continued periods of high volatility in 2012.
- **Global carbon markets are going to develop but optimism on Chinese emissions trading to cool.** 2011 did see China generate plenty of excitement and interest in its proposal to have a number of ETS pilot schemes up and running by 2013 and a national

ETS by 2015. While we would not want to underestimate the ability of China to move ahead with its plans, the goals of an ETS and those of maintaining rapid economic growth will need to be reconciled. This remains a difficult juggling act, and while China is likely to have a very specific ETS reflecting its characteristics, and this may not mean actually having a trading scheme with outside participation. 2012 will see the release of some of the rules for these pilot schemes and this should give us a much better idea of exactly what these schemes will look like. Apart from China, Australia will see the introduction of carbon pricing, starting on a road to its ETS in 2015 while California will end-2012 going into the start of its cap-and-trade scheme, provided it does not get tied up in litigation. Rule definition has also progressed in Quebec, with the province looking like it will be ready for trading come 2013.

- **COP 18 in Qatar will see some back-peddling.** While COP 17 in Durban was again unexpectedly successful, the outlook for Qatar is more difficult. While it should see the resolution of the final issues around the KP, notably what to do with surplus AAUs, the remainder of the negotiations will focus on the single agreement. The main concern here is that there becomes a concerted effort by some countries, particularly the US, to lessen the importance of the legal nature of the document. With that happening, and some of the old divisions on levels of targets, historical responsibility and the like bubbling under the surface, the talks are more set up to stall this year. It is not that nothing will happen, as more operational issues will be agreed upon, its just that the negotiating deadline is now four COPs away and states are unlikely to give away anything so early in the negotiating process.

Risks are present on both sides...

So a mixed bag of the bearish, the bullish and the neutral, which points to another interesting year in the global carbon markets in 2012. With such a precarious balancing of risk, it is hard to recommend an outright position in either direction. Our trading recommendation for the start of the year is therefore a spread trade and we recommend:

Sell the Dec 12-13 CER spread (sell Dec 12 CER, buy Dec 13 CERs). Such a trade takes advantage of both; another heavy year of issuance followed by the introduction of the existing quality restrictions for the Dec 13 contract; and the potential for further quality restrictions to be passed and the possible impact on prices of deeming the second KP period an international agreement (which we believe it is, but which is in the hands of lawyers).

...so a spread trade is likely to be the best outcome

We recommend some caution on EUA spread trades at this moment in time as a further deterioration in credit markets could cause them to widen, while signs of a better business environment will cause them to narrow.

EU ETS

Overview: New year, old concerns

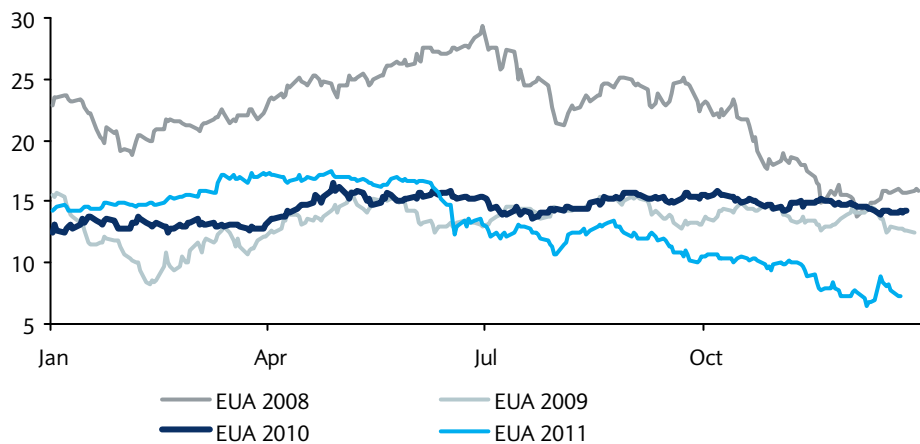
Prices being sustained at low levels

Over Q4 11, the EUA market displayed a high level of volatility with prices trading in a 6.5-10.7 €/t range, with the lower numbers dominating the market in December. Q4 11 was characterised by a view that the macroeconomic risks in the market were all largely biased to the downside.

Macro risks still present and dominant...

The biggest risk, although somewhat off the front pages, remains the sovereign debt and solvency issues, which have not fully been resolved and could still lead to a further deterioration in the macro economy. With macroeconomic risks still prevalent, our 2012 economic growth numbers for the EU are starting the year with real GDP forecast to fall by -0.2% (a 0.6% reduction on our previous numbers) and industrial production to fall in real terms by 2.9% (down from a 2% reduction in November). The macroeconomic outlook for 2013 is for real GDP to increase by 1% but for industrial output to still fall by 0.9%. While the vagaries of macroeconomic performance will continue to play out over the coming twelve months, the risks here are all still broadly to the downside. This is largely because the risk of lurching into another deep recession is more likely than lurching into a strong period of growth.

Figure 4: EUAs (€/t) – a rolling stone



Source: ECX, Barclays Capital

A new source of upside risk

...while intervention now looks likely

The strong macroeconomic risks had certainly biased the market to being short EUAs, and this has only been tempered by the environmental committee vote in December that held out the possibility that some form of price intervention was likely to be implemented. The upside comes from a proposal for the set-aside, a clause to withhold from supply a volume of phase 3 allowances from being auctioned in the first years of the phase. The volumes would then either be cancelled (requiring a subsequent change to the primary legislation of the EU Directive) or released back into the market later in the phase. The decision on which of these paths would be followed would only be decided much later, probably when changes to the EU ETS directive are being discussed in relation to phase 4 (beyond 2020).

What was fully agreed in the Environmental Committee included:

- a “compromise” proposal, including an amendment calling on the EC to amend the Auction Regulation with a view to withhold a 'significant amount of allowances' before the start of phase 3. This compromise was adopted by 42 votes in favour, three against, with six abstentions;
- EC to adopt a decision to reduce the number of allowances by 1.4bn, no later than six months after entry into force of the new energy efficiency Directive (amendment 324, adopted 31:30);
- a change to the ETS cap trajectory as of 2014 from a 1.74% reduction to 2.25% (amendment 354, adopted 30:28); and
- an amendment introducing a new recital calling for an adjustment of the reduction factor in the ETS Directive to align it with a 2050 GHG reduction target of 80-95% for the EU-27 (amendment 43, adopted by a clear majority).

Idea of a set-aside has buy-in...

It is unlikely though that the second and third proposals mentioned above will make it through the lead committee on this Directive (the ITRE Committee) that will vote on this on 28 February 2012. However, the compromise proposal (one) is likely to have already been negotiated with the ITRE Committee and therefore stands a good probability of passing.

This will leave open the volume of set-aside to still be agreed on, and speculation as to what these levels will be seems inevitable. The likely levels are:

- 1,400 Mt suggested in the above proposal, and this has an interesting parallel with the CER/ERU import limits that are 1.4 Gt over the 2008-12 period (which then increase to the 1.7 Gt level for 2008-20). Such a parallel is interesting in that one of the reasons for agreeing the linking directive allowing in offsets was to create cost containment – and such containment is exactly what the offset markets were providing in 2011. The implication of the set-aside would be to effectively neutralise the impact of the linking directive on carbon prices and compliance costs. While the 1.4 Gt has some rationale, it is a high level of set-aside and gaining wider agreement on such a high number is likely to be difficult;
- 700 Mt, which is a level somewhere in the middle and would be a compromise level between the all (1.4 Gt) and the nothing positions. This would also have the benefit of largely being a level that would leave the market out to 2020 largely balanced. A 700 Mt set-aside, taken say from the first five years of the phase, would mean an annual reduction in supply of 140 Mt; or
- 350 Mt, which is the minimum level of set-aside required to change the linear annual reduction factor from a 1.74% reduction to a 2.25% reduction.

Although a number as high as 1400 Mt seems overly ambitious

This is a political process and less rational numbers may be chosen, although we do expect that if the set-aside goes forward, the volumes to be set aside will be somewhere between the 350-750 Mt level. The set-aside, while not immediately being a change to the targets (cap), means that it is not accompanied by any expansion of offset use limits – which was held out in the Directive as being likely if the cap was changed. This does raise an issue of if a subsequent decision is to cancel the set-aside volumes, amounting to a change in the cap, does the EC allow more offsets. We think this would be very unlikely and note that while it might have been the initial intention of the EC to expand CER/ERU limits in the event of a cap change, the logic of the set-aside would argue against that and the final draft does leave that decision entirely to the discretion of the EC.

It will support prices but is it desirable?

The set-aside per se is not really a desirable policy, only being raised as a second-best solution given the difficulty of currently deepening the ambition of the cap in the EU ETS Directive. And this is where the real issue with the set-aside rests – the price of carbon in all of this should not be a policy goal. The EU ETS price is there to function as a rationing agent, allocating the atmospheric storage of carbon among competing users. The current low prices are not somehow evidence that the market is not working, as the market is accurately pricing the scarcity of the access to storage (as defined by the volume of EUAs). The only thing the low prices are telling us is that we can meet current policy goals at rather low costs. This is really incidental to whether those policy goals should be increased, which should be about what levels of targets are necessary to keep temperatures within the scientifically recommended levels. To be fair, the current EU target of a 20% reduction on 1990 levels is below the accepted scientific target of a 25% reduction for global emissions. As such, this suggests that from an environmental perspective, the EU should be looking at least at 25%, and possibly more.

As intervention for the sake of prices feels wrong

But such arguments are largely absent from the current debate, and introducing a policy change just to support pricing seems in error. The biggest risk is that if you intervene in prices when low, there will be calls to do the same when prices are deemed to be going too high. Such intervention can only be done at the expense of the environmental goals. Here our earlier point it is perhaps at its clearest: prices are not the policy goals, the emission reduction targets are the goal. The precedent that the set-aside represents, given the rhetoric around it being all about price support, is dangerous and in the long-term could undermine the long term integrity of the market by introducing regular price targeting interventions. While current low prices may be difficult for investors into the space, a heightened degree of regulatory risk that this entails might just not be a price worth paying.

Higher prices have their cost

Furthermore, the current low prices are indicative of low economic activity in the EU and this helps limit compliance costs for compliance industries at a difficult trading time. While this is a very important point, it is precisely these considerations around competitiveness and carbon leakage that will be discussed as the bill goes through the EU legislature. As such, these points around economic activity are unlikely to be lost in the debate as it goes forward.

And only a transitory removal will have limited impact on investment

Finally, there is an issue about how effective the set-aside will be in influencing investment decisions. The rationale for the set-aside is presumably that current low prices are likely to discourage investment in low-carbon plant and projects. The problem with this rationale is that low prices only influence investment decisions to the extent that it colours longer-term expectations. For major investment decisions, the start of revenue generation and the pay-back period mean that expectations about carbon prices in five to ten years time are much more important than the prices seem now. So, the set-aside will only work if it is successful in changing expectations around the latter part of the phase – and this means that there has to be a realistic chance that these will be cancelled. With the amendment on changing the cap not seeing enough support to get it through the wider Parliament at the moment, it is questionable if eventual cancellation will be the expected outcome.

Early volumes – drowning, not subsidising

EIB volumes entering the market

With the EUA and offset markets providing much more supply than expected, the other issue is what volumes of phase 3 EUAs are likely to be sold into the market prior to 2013.

With 200 Mt by September a given

In terms of the 300 Mt of NER300 allowances to be sold by the EIB, presumably it started sales in December (unlikely to be more than 20 Mt) and now have nine months to sell the remainder of the first tranche of 200 Mt. We are assuming that target volumes will be 5-6 Mt a week and that will continue for most of the remainder of the year. We expect that at a minimum, 200 Mt will be sold through next year but more likely we will see 250 Mt done (including 2011 sales), with another 50 Mt being sold in Q1 2013.

Not much subsidy raised at these levels

We do note that there is some residual risk here in that the purpose of the NER300 is to provide subsidy to help commercialise a number of expensive technologies, including carbon capture and storage (CCS). With a price expectation of 30 €/t, 300 Mt of EUAs would have generated some €9bn. For nine CCS projects (we note 13 CCS projects submitted applications for NER funding, although seven of those were in the UK), this would be close to €1bn per project. At a realised price of 7 €/t, this same volume provides €2.1bn, so close to maybe €250mn per project – a level at which few projects would likely to still go ahead.

So while the EIB can rightly say that it is indifferent to the price, as it is fulfilling the role of a monetising agent, the EC which is responsible for administering the NER300 and providing the subsidy should not be so indifferent. And this is the difficult situation for the EC given our discussion above on the set-aside as does it:

- persist with the sales (increasing supply), which would have the benefit of monetising the subsidy quickly, although at the expense of the value of subsidy that can be then distributed. To do so, runs the main risk that far fewer projects will be able to go ahead (so the available subsidy pot will be distribute amongst maybe 2-3 projects only); or
- instruct the EIB to stop selling and provide it with a revenue target that it would have to earn. This would stop the level of current sales, thereby providing a fillip to prices (which is what it is trying to do anyway with the set-aside), while potentially introducing even more regulatory risk into the market? Certainly, a common call from market participants, including ourselves, has been for the EC to tell us what it is going to do and then do it. To go back on the long announced sales of the NER300 at this time could be seen as undermining the EC's role further as a price-indifferent regulating body.

So some pressure to delay the second 100 M?t

So, we are in a situation where the NER300 is having a fairly significant bearish impact on the market, requiring further intervention, which can only be accomplished after the damage to prices caused by the NER300 sales is already largely done. A salutary lesson, if there ever was one, for keeping the rules simple and not introducing seemingly benign clauses to meet other political goals. However, the politics are always present and thus we simply flag this as a potential risk. The NER300 is not fulfilling its goals and questions are likely to be asked, although given the bureaucracy of the EC, it is unlikely that the wheels that have been set in motion could be stopped before the first tranche of volumes are already sold. Thus, it is more likely, if realised, to affect the second tranche of 100 Mt, which the EIB already has more discretion with regards to timing the sales. We are forecasting that 40 mt of that 100 Mt will be sold in 2012, and it is that volumes that seems most at risk of not appearing.

While the other 120 Mt of early volumes are at the mercy of infrastructure

In terms of the 120 Mt of early volumes that the EU set out to sell in 2012, the main question is will the infrastructure (registries, central auction platform) be put in place to allow the sales to occur. The latest official statement from the EU is that the process is in place to allow these sales to happen by H2 2012 and that all 120 Mt will be sold. However, it must be noted that the EC is not in control of all of the aspects of this process and delays are more likely than not. If there is a risk of any volumes not turning up in 2012, then it is these 120 Mt that look most at risk. Allowing for some delay, we adjust the numbers expected in 2012 to be 60 Mt – or that these auctions only start in Q4 12. Further delays are not out of the question.

In summary, of the 420 Mt of phase 3 volumes that could appear by the end of 2012, we expect that 300 MT will appear, and that there is some uncertainty on another 100 Mt. Given the political pressures around the current price levels, there is a non-negligible risk that these volumes simply are pushed back to 2013 and 2014.

Some risks to phase 2 NER adding to supply

Adding to this uncertainty is how much of the phase 2 NER will be left unallocated, how much will be cancelled, and how much sold via auction into the market. With the phase 2 NER volumes, the risks are largely to the downside as these are correlated with the macro-risks.

The length will stay with us...

To summarise our views on the market balance to the end of 2012, we expect that:

- the cumulative length in the EUA's market alone is forecast to be above 400 Mt by the end of 2011 and this is to increase to 675 Mt by the end of 2012;
- CER/ERU offset use will be 945 Mt, so that cumulative length at the end of the phase will be around the 1.68 Gt level. With much of that being able to be offered for outright sale, the market is having to deal with a significant level of volume potentially being offered into the market; and
- selling by the EC/EIB of phase 3 EUA volumes in 2012 will be between 200-420 Mt, with risks building to push those levels towards the minimum rather than the maximum.

CDS levels widening

The increase in industrial CDS levels seen over Q4 11 has stayed in the market and with such borrowing rates not fully reflecting the difficult credit conditions in countries that have seen a sovereign downgrade, the market has started looking an attractive source of financing for industrials. With the 2013 levels of contango having widened, but still around 300 basis points above Euribor, this compares with the 300-500 basis points seen under the CDS. While the CDS are not at levels associated with the last credit crisis, the risks of debt default in "at risk" sovereigns has begun to squeeze the credit markets. Already the appetite for trades like the repo, a form of collateralised lending, has increased and should be a feature of the markets in 2012.

Utility buying is the only source of upside

Given that the risks still feel biased to the down-side, and with the steady drip of volumes promised from the EIB, proprietary traders are still more likely to build up short positions with all the downside risks in the market. The buy-side remains in the hands of the utilities.

Utility hedging

Enthusiasm for hedging should continue in 2012

German dark spreads for calendar 2013 base-load contracts stabilised over Q4 2011 and are starting the year back around the 10 €/t for 36% efficient plant. The higher dark-spreads have led to greater power sales and a stronger buy-side for EUAs through Q4, with hedging levels seeing some increases. The concern remains that if while we have seen good hedging at current spreads, this has corresponded to a period of falling EUA prices. With spreads holding up, we should still see good activity continuing this year, although we still expect the supply side to dominate.

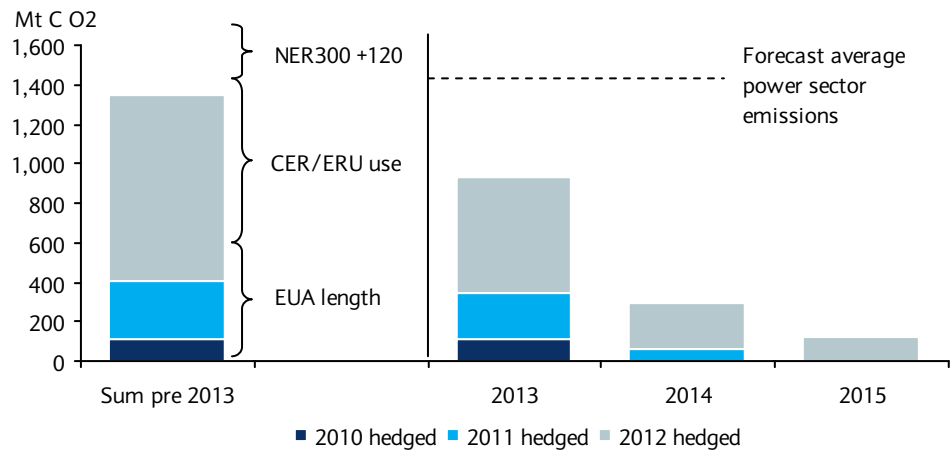
In terms of our utility hedging assumptions, we assume that:

- At the end of 2011, total demand for early hedges was around 400 Mt of EUAs. On the supply side, we expect the usage of CERs to be between 500-550 Mt over the first four years of the phase, plus the EIB potentially having sold 20 Mt of phase 3 EUAs.
- By 2012, we forecast the total demand for forward hedges to be about 1350-1400 Mt as we expect power hedging to continue to gather pace as we approach 2013. We expect that some 20% of the thermal portfolio to be left un-hedged when they enter 2013. Estimates of phase length have increased to 675 Mt on a writedown of European industrial production in 2012. We expect that CER/ERU use in the coming years will be considerable at 950 Mt. We estimate that the sale of phase 3 allowances in 2012 from

the EIB and the EC to be 310 Mt (250 Mt from the EIB and 60 Mt from the EC – see discussion above), and even while not all industrial length will come to market, the market still looks massively over supplied.

- By 2013, 50% of the early EUA volumes (30 Mt of the 60 Mt expected to be sold) will be removed from the cap and if we see some higher levels of generation plant closures after the last free allocation in 2012, this may help keep spreads at better values, and more normal utility forward hedging may come back. Certainly in 2013, CER availability will be less as industrial gas limitations reduce supply and with industrials now likely to be short, the market could finally see a modest level of tightening. Given all of this, the volatility that we expected to see in the transition from phase 2 to 3 may now be pushed to the start of phase 3. Given the lower supply, prices should see some support but this is likely to see gradual price increases rather than anything more dynamic.

Figure 5: Sum of hedges and potential sources



Source: Barclays Capital

Price behaviour and outlook

Price outlook for 2012 is gloomy, and falling

Given the discussion above, highlighted by the further deterioration in the outlook for industrial production and GDP in 2012 and 2013, a worsening of the market balance, heavy offset issuance, widening industrial CDS and sales of NER 300, we have revised all of our EUA price forecasts downwards. We have written down:

- H1 2012 from 11 to 7 €/t (a 37% reduction);
- H2 2012 from 13 €/t to 8 €/t (a 37% reduction);
- 2013 from 15 €/t to 12 €/t (a 20% reduction), also down to lower growth prospects beyond 2012, a lower emissions base and having moved some 80 Mt of early volumes forward from 2012 to 2013. The introduction of a set-aside is assumed to be 140 Mt in 2013 (consistent with a 700 Mt total set-aside for the phase), but the continued moribund performance of the economy expected for 2013 will keep price rises muted; and
- Phase 3 averages from 22 €/t to 18 €/t (an 18% reduction), reflecting the lower prices expected in the early years of the phase and the lower base from which emissions will be starting.

The key risks to these price forecasts include:

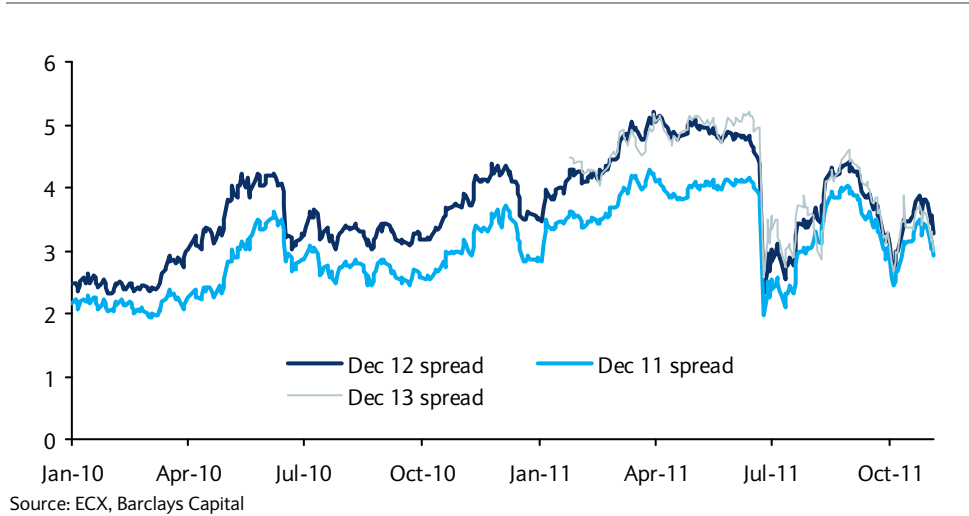
- the actual level of utility hedging, although we do assume a continuation of the acceleration of hedging seen in H2 11;
- the EU release of phase 3 volumes into the market in 2011 and 2012. We are currently assuming that 300 Mt come in by the end of 2012, and 60 Mt in 2013; and
- the macro-economic outlook and industrial output, with the main concern being further downward revisions as the sovereign debt crisis continues to play out.

EUA-CER spreads: volatile but staying wide

EUA-CER spreads have stayed around 3 €/t

Despite the collapse in the underlying commodities, the front-year EUA-CER spread has stayed trading in a 1.2 €/t range (2.3-3.5 €/t) over December. For the Dec 12 spread, the mean spread was 3.0 €/t over the last month, which does show a propensity for the spread to stay around these levels, despite the low value of the underlying. We expect the spread will stay around the 3 €/t level during Q1 12, and that a widening of this spread will happen from Q2 12 when utility hedging should be stronger and we get closer to the application of quality restrictions and HFC-23 and N2O (adipic) based CERs, which will become increasingly desperate for buyers.

Figure 6: Evolution of the EUA-CER spread (€/t)



The fundamentals: the EUA demand side

Economic outlook for 2012 – recession?

2012 GDP forecast written down again

The macroeconomic risks will remain crucial for the market, and we have lowered our euro area real GDP projection for 2012 from 0.4% in November to a recessionary -0.2%. Indicative Q4 numbers on GDP and IP do point to a slowing of the European economy and this slowdown is reflected in our expectations for Europe. We have published our first forecasts for 2013, and this does point to better GDP numbers with growth of 1%. We would say that with the fiscal packages in place, government-led stimulus is likely to be thin on the ground for the next few years. However, a gradual return to business confidence when the sovereign debt issues move from being a crisis to just a problem should turn growth positive by 2013.

Figure 7: Economic forecasts – real GDP growth

	2010A	2011	2012E	2013E
EU 27	1.7%	1.5%	-0.2%	1.0%

Source: Barclays Capital

Industrial production

Industrial output growth is forecast at -2.9 % y/y in 2012

While the European GDP numbers have been written down, our forecast industrial production growth for the area have also been written down with our IP forecasts for 2012 to be a 2.9% real reduction, down from the 2% y/y reduction forecast in November. Our 2013 numbers remain recessionary, with industrial production forecast to fall by another 0.9% y/y in real terms.

Figure 8: Industrial sector production – y/y change

Sector	2009	2010	2011 YTD
Industrial production (total)	-15%	7.4%	5.7%
Oil refining	-7%	-4%	-2.7%
Cement and lime	-19%	-5%	2%
Glass	-15%	10%	3.8%
Pulp and paper	-9%	16%	1.0%
Steel	-30%	26%	3.3%

Note: YTD 2011 is first ten months. Source: Eurostat, Barclays Capital

The wider energy complex

Oil to average 115 \$/bbl on increasing tightness

The concerns over macroeconomic performance, both European and global, are being felt in the oil market with prices ending the year trading in the 102-110 \$/bbl level for Brent crude. The continuing saga of the European sovereign debt, and the potential for wider global impact, has been balanced against a more supportive set of oil market fundamentals. Looking ahead, the oil market is starting 2012 with lower inventories than at the start of 2011, with lower spare capacity in OPEC and concerns over non-OPEC production. Against this, lower global economic growth prospects (global GDP growth of 2.9% against 2011 growth of 3.8%) will help curb increments but global oil demand will still likely set another annual record in 2012. Given this, the outlook for 2012 is that prices for Brent Crude will average 115 \$/bbl level, moderately up on the 2011 average of 111 \$/bbl. Key upside risks are geopolitical event driven supply disruptions, such as those around Iran, as the market will struggle to balance in the event of a significant, prolonged output at a major exporter.

Coal still falling on soft demand-side

Over Q4, European benchmark coal prices (CiF ARA) continued to soften from the start of October levels of 120 \$/t to end the year trading below 110 \$/t. The slow reduction from mid-year highs of 130 \$/t was driven by a combination of factors, including: a very mild Q4 in the northern hemisphere; healthy global stocks at most ports and utilities; and some residual price sensitivity in Chinese and Indian buying that are both capping any increases. South African benchmarks (FOB Richards Bay) have softened from around 110 €/t to c.105 \$/t, which means that the API2-4 spread has narrowed to around the 5 €/MWh level for most contracts. While ARA ports retain a good level of inventory, the mild start to the winter has kept spot purchasing low and left prices to drop further. While low carbon prices are supporting coal-fired generation, the persistent level of stocks means any upside from here will require some colder temperatures.

Figure 9: European energy market forward price movements – y/y changes

Commodity/contract	M+1 (Feb) 2012	Q2 12	Q3 12	2013
Oil – Brent Crude	17%	15.7%	14.2%	9%
Coal – CIF ARA	-8.3%	-11.3%	-6.3%	-5%
Gas – NBP	-8.5%	-1%	1%	7%

Note: Compares 30 December 11 prices against 30 December 10 prices with commodities denominated in euro terms.
Source: Ecwin, Barclays Capital

Natural gas prices during a mild Q4

European natural gas (UK NBP) prompt and forward prices softened throughout Q4, removing some of the risk premium that had been priced in through 2011. The biggest factor in the Q4 slide has been those warm temperatures that have left UK storage sites with almost 2 bcm more gas than at the same time last year. Despite this, prices for gas to be delivered from summer onwards has either maintained value or added it. The biggest driver along the curve was the strength in the oil market, which has dragged up oil-indexed gas prices and kept the UK as a net exporter through most of Q4. The relatively high prices, in a year that was the second warmest on record in the UK, has helped keep gas demand for power generation at relatively low prices. In addition to the modest demand, LNG deliveries and supply onto the system remained healthy. Looking ahead to 2012, natural gas remains sensitive to both weather and any hint that LNG cargoes might start heading elsewhere. If temperatures continue to stay warm, prices will continue to gradually soften downwards, provided the LNG keeps coming. The later suggests that gas price levels are likely to still see exposure to oil-indexed prices despite better levels of continental market liberalisation.

Price relativities still coal biased

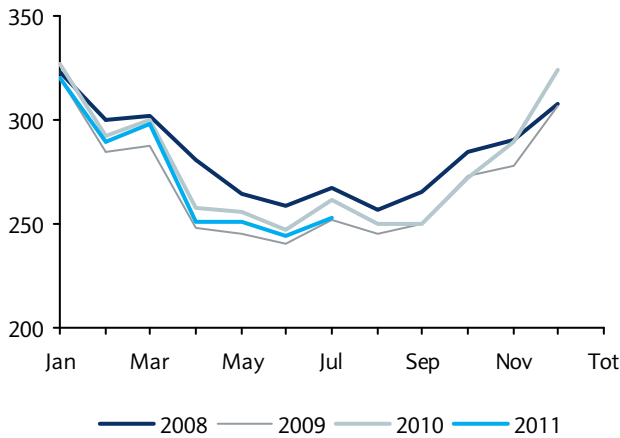
The relative development of energy prices over the last quarter, and the steady drop in carbon prices, has meant the competitiveness of average-efficiency gas plant against average efficiency coal-fired generation has stayed firmly in favour of coal. The implied switching price for average efficiency gas plant (50%) versus average efficiency coal (34%) in the UK is about 36.2 €/t for the remaining winter, and at 29.7 €/t for all of 2012. With the market being so long carbon, the implied fuel-switching levels are hardly important, but it does suggest that relative fuel prices have a fairly long way to go before gas-fired generation is able to price itself back into the market.

Power sector

Power sector load and thermal generation down in first 8 months of 2011

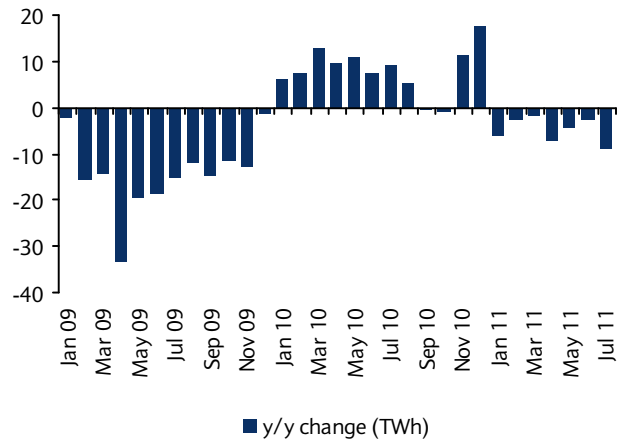
The data on gross generation after the first eight months of 2011 is 1.2% down y/y, with the milder H1 11 temperatures driving less demand for space heating. Thermal generation was similarly down by 1.7% y/y with fairly big reductions in northern European power markets largely offsetting the increases seen in Iberia (low hydro driving a 14% YTD increase) and in central and eastern European markets (up 6.7% y/y). Interestingly, the 8.4GW of nuclear power closed in Germany in March has still not led to a YTD increase in central western European power markets with that region still showing a 4.6% y/y fall to the end of August. While the German nuclear closures should increase the level of thermal generation in the Q4 winter period, much of the missing nuclear generation to date has been replaced with imported nuclear generation (France and the Czech Republic) and with renewables.

Figure 10: EU 27 Power sector generation, TWh



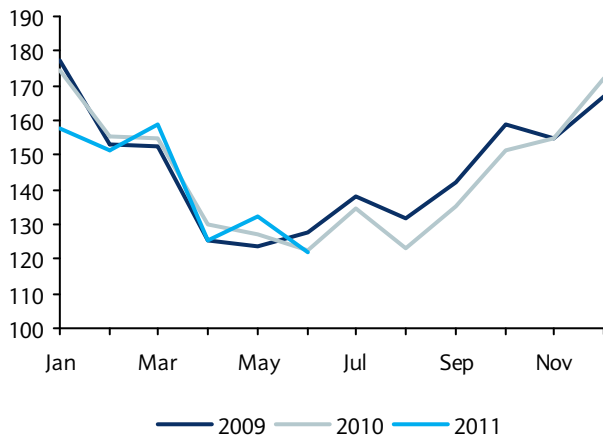
Source: Eurostat, Barclays Capital

Figure 11: EU 27 Power generation – y/y %, TWh



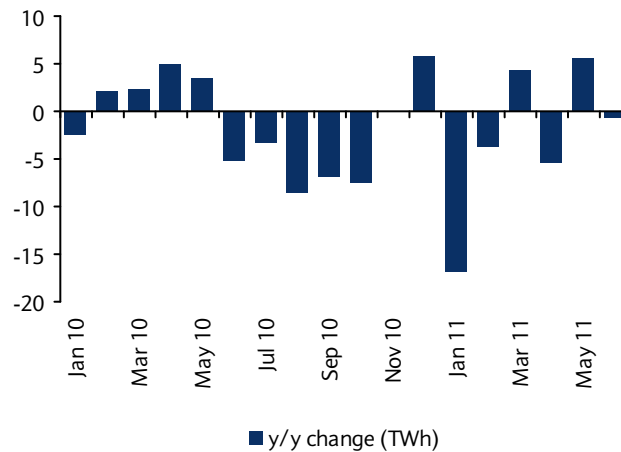
Source: Eurostat, Barclays Capital

Figure 12: EU 27 Thermal generation, TWh



Source: Eurostat, Barclays Capital

Figure 13: EU 27 Thermal power generation – y/y %, TWh



Source: Eurostat, Barclays Capital

While thermal generation volumes are still down y/y, within this coal-fired generation has been in the money more than gas-fired power stations given the relative fuel price developments this year. We expect that this should lead to a moderate increase in power emissions y/y for the EU-27 in 2011, being modestly up by around 1.5% per annum.

The traded market: 2011 review

*Traded volumes now up
4.3% y/y*

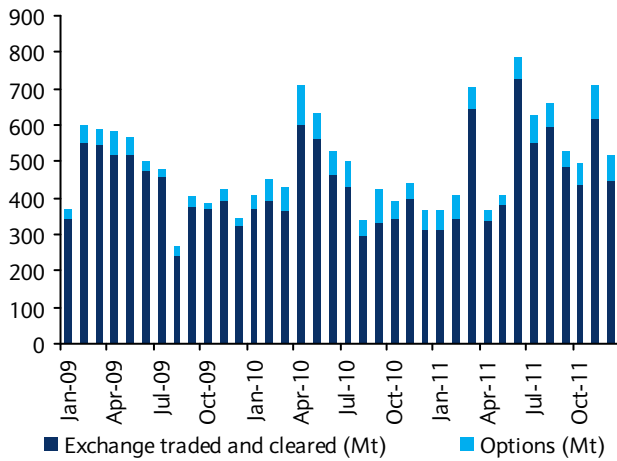
Over 2011, traded EUA volumes (exchange traded or cleared) were up by 4.3% in y/y terms, reaching 5.9 Ct, which is a much smaller increase than we expected at the start of the year. At the start of the year, the expectation was that greater levels of 2013 open positions would be hedged by power generators and that traded volumes would rise by more significant levels to reflect that increase in end-user demand. The modest increase in traded volumes does hide a comparatively slow H1 11 (traded volumes down 13% y/y) and a better H2 11 (up 27% y/y). The second half of the year saw, at the same time, an increase in power spreads, which helped spur greater levels of forward hedging of power positions and a greater willingness to sell by anyone with an inventory of carbon that is not covering a future compliance obligation.

Now, with future levels of spreads staying around the 10 €/t level and some downside risks to those spreads, we would expect that generators will continue the increase in buying that the removal of free allocation entails. We are forecasting that traded volumes should increase by some 17.5% in 2013, to rise towards the 7 Gt level.

Open interest for post-2012 hedges at 400 Mt

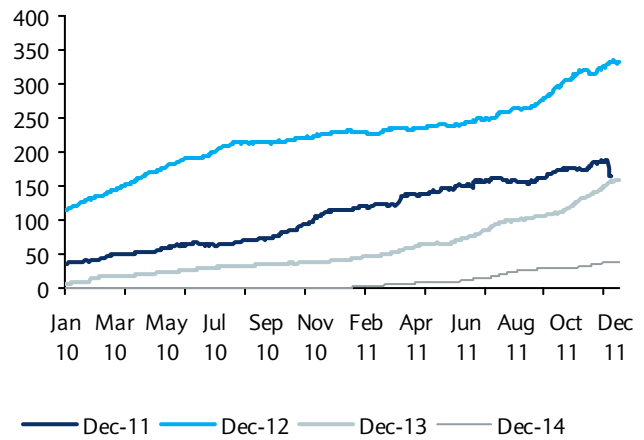
With traded volumes picking up only modestly, open interest increases on ECX has also increased, albeit modestly. Across all contracts over the first 12 months of 2011, open interest levels increased by 152 Mt (28% in y/y terms), a smaller increase in open interest than seen over 2010 (an increase of 228 Mt). In terms of the individual contracts, the YTD increase in open interest has been 105 Mt in Dec-2012, 116 Mt in Dec 13 and 38 Mt in Dec 14. Dec 11 expired with open interest levels around 160 Mt, in line with levels seen in the 2010 contract at expiry. We estimate that the level of EUAs being held in open interest for post-2012 hedges is around the 400 Mt level.

Figure 14: EUA Exchange traded/cleared and options (Mt)



Source: ECX, Bluenext, Green Exchange, EEX Barclays Capital

Figure 15: ECX EUA open interest by contract (Mt)



Source: ECX, Barclays Capital

The market balance: Long, long, long

The phase looks long by 675 Mt

We have made revisions to our market balance numbers this month on the back of the write down in IP numbers. We are forecasting the market to be long EUAs by 675 Mt EUAs, up from our previous forecast of 657 Mt. Factoring in the use of offsets this number expands to -1620 Mt.

While phase 2 is a net long, 2013 is a net short of 59 Mt and 2014 is a net short of 121 Mt before the use of offsets is considered.

Figure 16: EU ETS supply and demand balance (Mt)

	2008	2009	2010	2011F	2012F	Phase 2	2013F	2014F
EUA Allocation (cap)	2003	2052	2079	2204	2441	10,778	2256	2220
Emissions	2119	1882	1940	1971	2187	10,096	2315	2342
Emissions – cap	116	-170	-135	-233	-254	-675	59	121
ERU/CER usage	80	80	135	250	400	945	200	200
Net position (inc offsets)	36	-250	-270	-483	-654	-1620	-141	-79

Note: EUA Allocation includes free allocation plus auctioned volumes. 2012 does not include volumes of phase 3 volumes sold for use in 2013 and onwards. Source: CITL, Barclays Capital

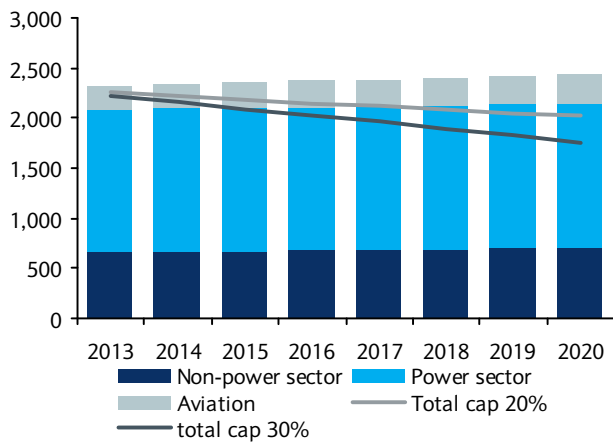
Phase 3: The long-term outlook

Phase 3 balance and pricing

While phase 3 looks long

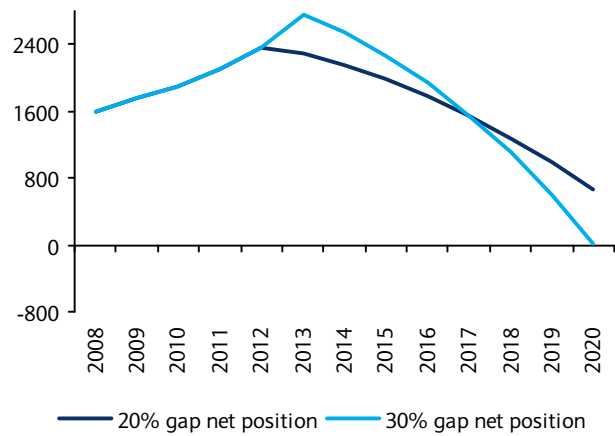
Our long-term forecasts have changed given the reductions in economic outlook for 2012 and 2013 the writing down of growth. Our full phase 2 and 3 market balance is long 740 Mt of EUAs – given a target level of a 20% reduction on the 1990-level emissions.

Figure 17: Gaps to cap under the different targets (Mt)



Source: Barclays Capital

Figure 18: 20% and 30% target – cumulative net positions (Mt)



Note: Gap here is defined as EUA cap plus CER/ERU phase allowance less emissions. Excludes CCS reductions. Source: Barclays Capital

Figure 19: Phase 3 balance

2013-20 (Mt CO ₂)	20% target	30% target
Phase emissions – Cap	1635	2935
Banked EUAs + CERs/ERU allowances	2375	2875
Extra abatement required	-740	60

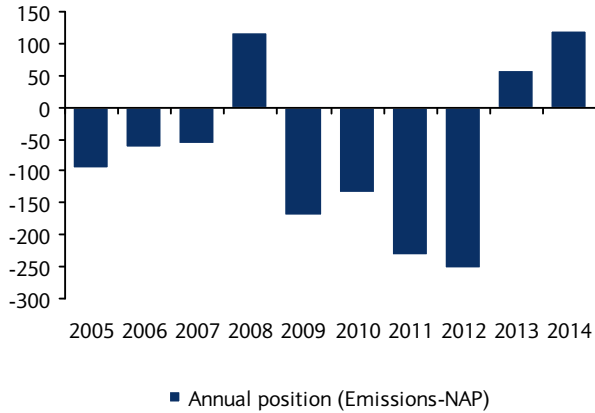
Source: Barclays Capital

We note that risk to the forecasts:

- on the upside, includes a change to the cap that may be implemented through the use of the set-aside. The set-aside is covered in greater detail earlier in the report; and
- on the downside includes a prolonged and deeper second European recession that would further reduce both current and future emissions estimates.

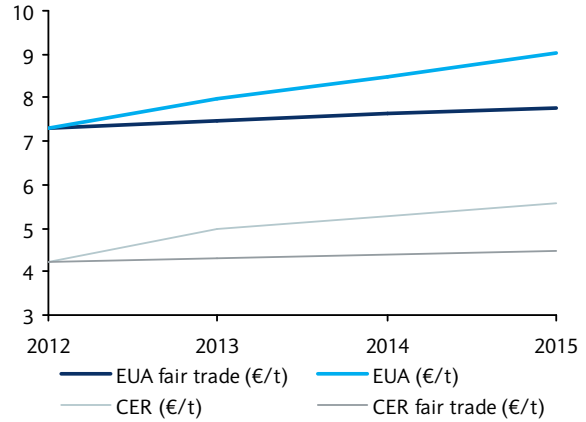
EU ETS charts

Figure 20: EU ETS Annual gap to cap (Mt CO₂)



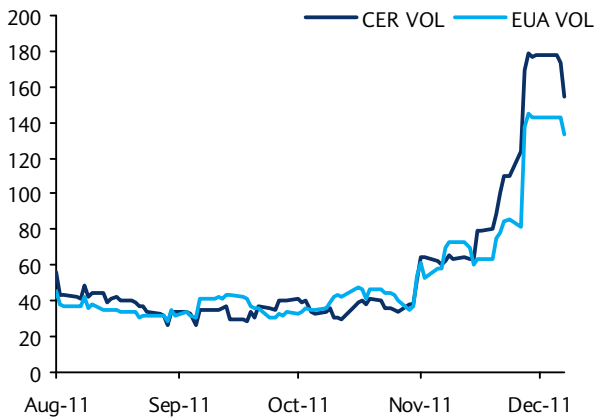
Source: Barclays Capital

Figure 21: EUA and CER fair value and forward curve



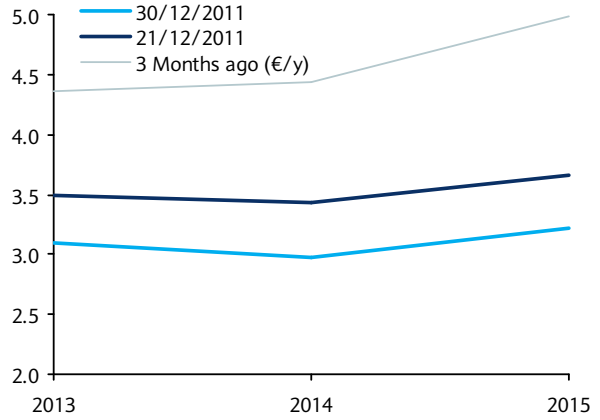
Note: Fair value calculation takes the current DEC 2010 price and applies the cost of carry at Euribor to derive a DEC 12 price. Source: ECX, Barclays Capital

Figure 22: EUA and CERs volatility (90-day, close to close,)



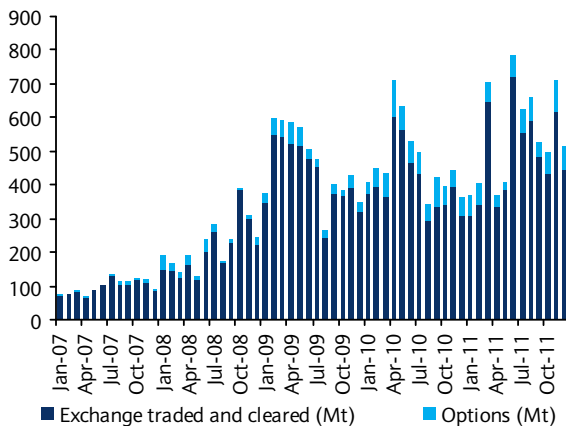
Note: For front year contract. Source: ECX, Barclays Capital

Figure 23: EUA-CER spreads across the curve (€/t)



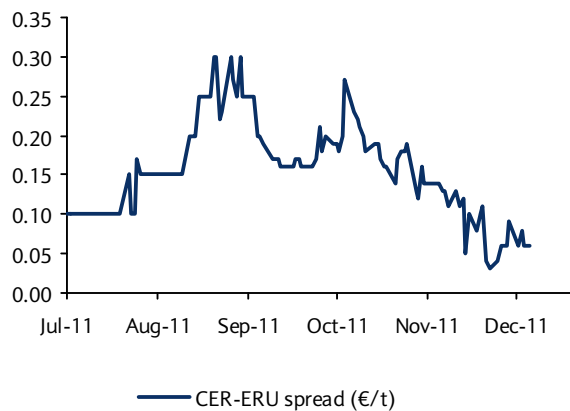
Source: ECX, Ecowin, Barclays Capital

Figure 24: Traded volumes - forwards and options (Mt)



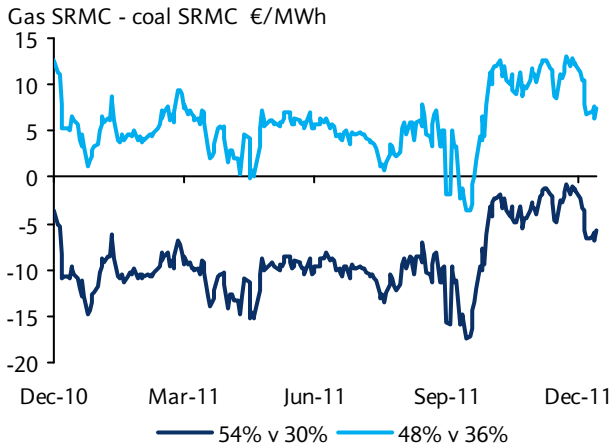
Source: ECX, Barclays Capital

Figure 25: CER-ERU spreads (€/t)



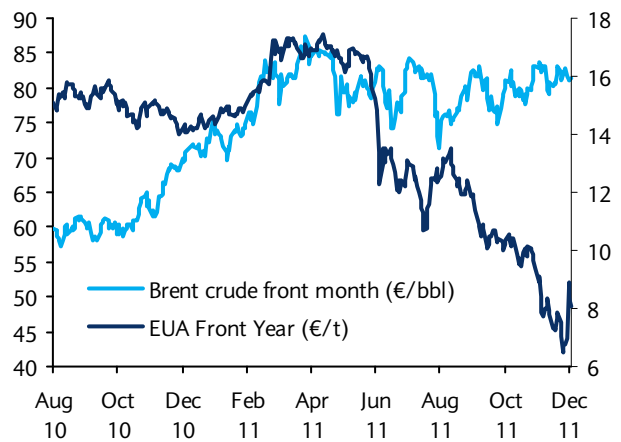
Source: ECX, Barclays Capital

Figure 26: Fuel switching at the prompt



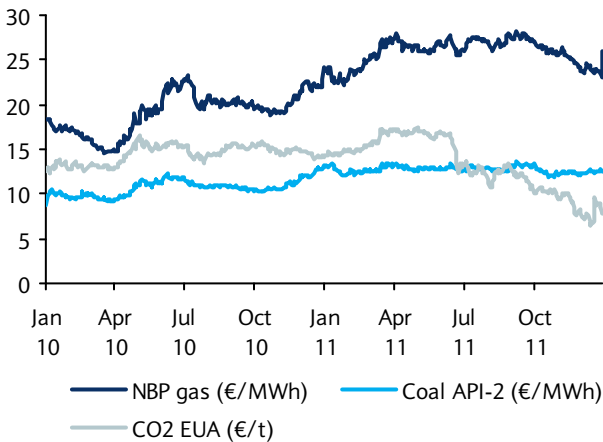
Note: The chart shows the cost of gas-fired generation less the cost of coal-fired generation using spot prices for fuels and carbon. NBP used for gas and API 2 used for coal. The first figure refers to gas-fired plant efficiency, second to coal-fired plant efficiency. Source: Ecowin, ECX, Barclays Capital

Figure 27: Oil and carbon prices



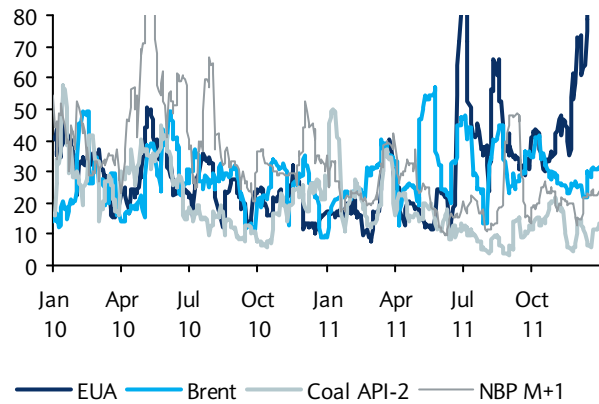
Note: LHS axis measures oil, RHS measures EUAs. Source: Ecowin, ECX, Barclays Capital

Figure 28: Cross-commodity energy price movements (Y+1 contracts)



Source: Ecowin, ECX, Barclays Capital

Figure 29: Comparative volatility - energy markets



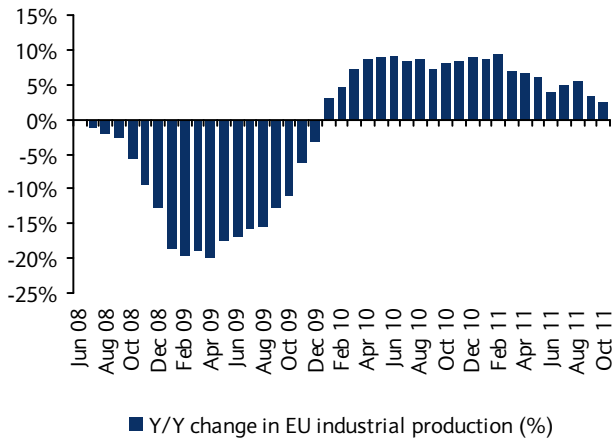
Note: 15-day close to close volatility. Source: Ecowin, Barclays Capital

Figure 30: Cross-market correlations (90 days)

	Oil	Gas	Coal	Carbon	Power UK	Power GY
Oil	100%	-10%	-22%	-1%	-5%	-2%
Gas	45%	100%	63%	92%	86%	97%
Coal	-30%	-61%	100%	55%	37%	61%
Carbon	-33%	-36%	63%	100%	80%	95%
Power UK	-20%	20%	27%	58%	100%	89%
Power GY	-21%	13%	-6%	37%	58%	100%

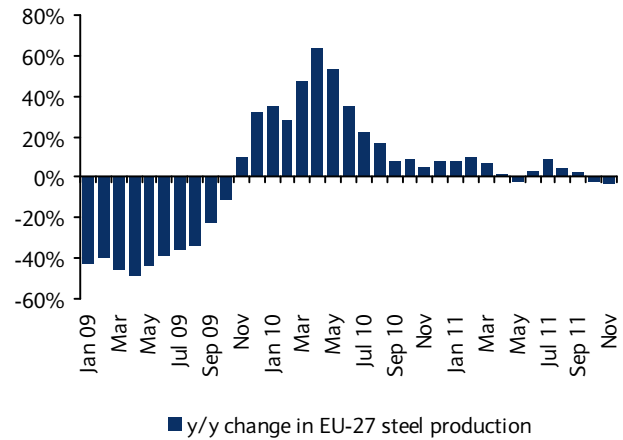
Note: Correlations below the 100% diagonal line are the correlations of the most prompt contracts in the market (spot correlation). The correlation figures above the 100% diagonal line are the correlations for the Y+1 (2009) contracts. Correlations of prices rather than returns over 90 trading days. Source: Ecowin, Barclays Capital

Figure 31: Industrial production



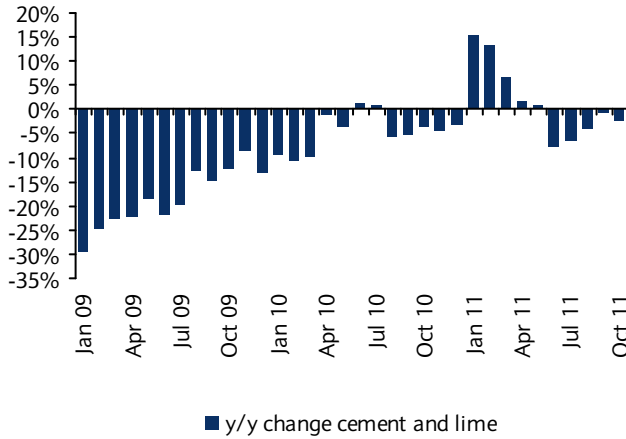
Source: Eurostat, Barclays Capital

Figure 32: Steel production (y/y change)



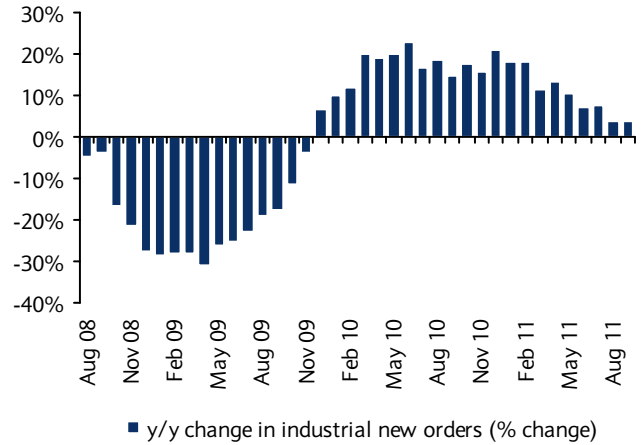
Source: Eurostat, Barclays Capital

Figure 33: Cement and lime production (y/y change)



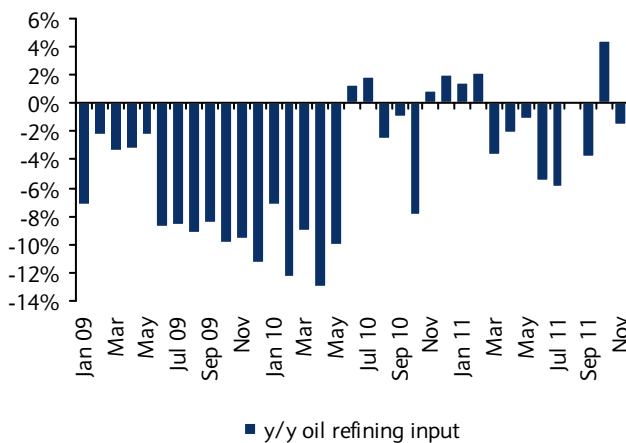
Source: Eurostat, Barclays Capital

Figure 34: Industrial new orders (y/y change)



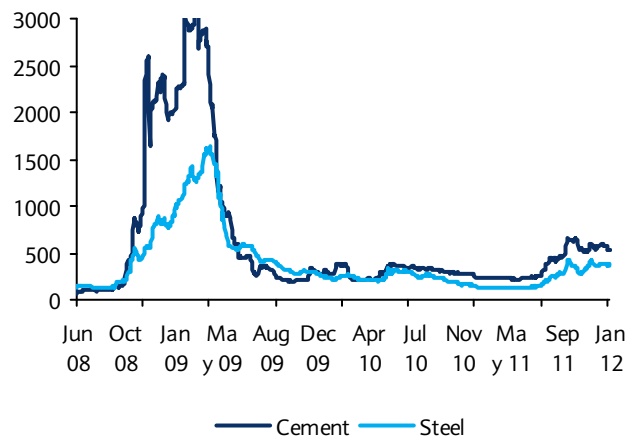
Source: Eurostat, Barclays Capital

Figure 35: Oil refining production input (y/y change)



Source: Eurostat, Barclays Capital

Figure 36: Credit default swaps (bp)



Note: Simple averages of quoted CDS for 6-month € loans for: Thyssenkrupp, Corus, ArcelorMittal, Holcim, CEMEX and HeidelbergCement.
Source: Ecwin, Barclays Capital

KYOTO PROTOCOL MARKETS: ISSUES AND ISSUANCE

The CDM: Kyoto period (2008-12)

Overview

Validation, registration and issuance

Record activity in the CDM

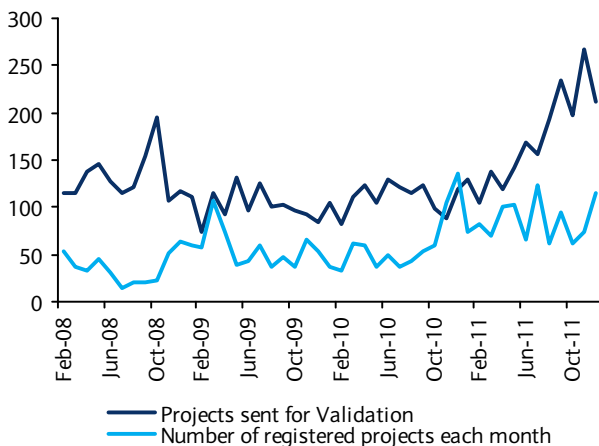
2011 was the year the CDM juggernaut hit top speed with almost all aspects of it setting an annual record. In particular, 2011 saw:

- projects into validation averaged 172 per month, up by 56% on the 2010 average of 110 per month. In total, 2063 projects entered the pipeline in 2011, and with November and December both logging more than 200 projects, there seems to be no evidence of a slow down in primary origination activity;
- projects being registered averaged 85 per month, up by 44% on the 2010 average of 59 per month. In total, 1024 new projects were registered in 2011, beating the previous high by more than 300 projects; and
- CERs being issued were 319 Mt, a monthly average of 26.6 Mt, beating the previous annual high by some 180 Mt.

But living on borrowed time?

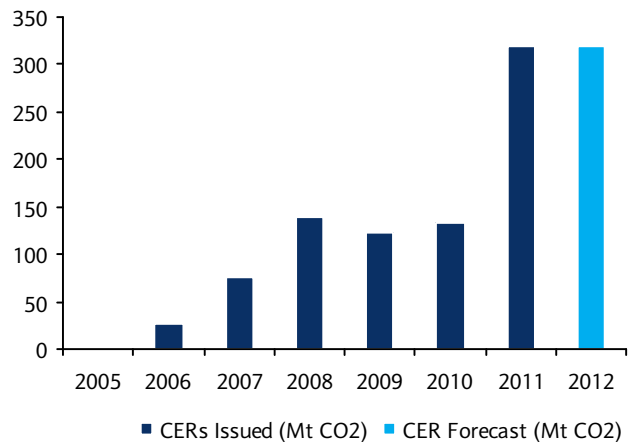
While the activity in the CDM remained strong through 2011, it is the case that there is an incentive to register projects before the end of 2012 to ensure eligibility in the EU ETS. The activity that this deadline is generating does mask a number of risks to the future of the CDM, with the biggest risk remaining the limited levels of post-2012 demand. Without greater clarity on where demand might come from, this could lead to a significant reduction in new origination and registration activity once we are into 2013.

Figure 37: Validation and registration



Source: UNEP Risoe, UNFCCC, Barclays Capital

Figure 38: Issuance forecasts



Source: UNFCCC, Barclays Capital

Durban's implications

COP17 implications for the CDM the most important

The developments at COP17 in Durban did have implications for the CDM. At its most obvious, an agreement on a second compliance period for the KP should largely end any speculation over the continuation of the mechanism. At the very least, the CDM will

But is it an international agreement?

continue to 2018 in line with the duration of the second compliance period and there has to be an expectation that the mechanism will be transposed into any new agreement.

More importantly for the market is whether or not this agreement meets the criteria of an international agreement as specified in the EU ETS trading directive in the article that refers to the eligibility of credits in the scheme post-2012. The article in question is Article 11a, which has the title “use of CERs and ERUs from project activities...before the entry into force of an international agreement on climate change”. The article lays out the post-2012 restrictions outlined in Figure 39.

Figure 39: EU ETS restrictions on use of CERs/ERUs

Article 11 b paragraph	Restriction	Eligibility
2	Projects registered before 2013 – emission reductions pre 2013	Until 31 March 2015
3	Projects registered before 2013 – emission reductions from 2013 onwards	Fully
4	Projects registered after 2013 - emission reductions from 2013 onwards	Eligible if from an LDC
5	Projects registered after 2013 - emission reductions from 2013 onwards	Eligible if a bilateral agreement with the host
7	Once an international agreement on climate change has been reached, only credits from projects from countries which have ratified that agreement shall be accepted from 1 January 2013.	
9	From 1 January 2013, measures may be applied to restrict the use of specific credits from project types	HFC-23 and N2O adipic acid will not be valid from 1 May 2013.

Source: EC, Barclays Capital.

The outstanding questions surrounds paragraph 7 and whether:

- the limited participation of countries in the second KP period is an international agreement. Given the almost all of the non-annex B countries are expected to participate, the answer would appear to be yes, although this is to be clarified by the EC; and
- if paragraph 7 should be read as an AND condition (all of the above restrictions apply and the additional restriction now applies) or an OR condition (once an international agreement is reached, the only restriction is on ratification). The distinction between an AND or the OR condition is important and the confusion stems in part from the title, implying that the restrictions in the clause apply in the event of no international agreement.

No eligible CERs at start of phase 3?

The above are questions of legal interpretation, but regardless of how the actual clause is interpreted, the application of paragraph 7 could result in no CERs being deemed eligible in the first months of 2013. Given that 2012 is being used to iron out final issues around the second period before a final agreement is reached at COP18 (in December in Qatar), it is likely that no countries will be in place to have actually ratified the second compliance period by the start of 2013. While the ratification would gradually increase throughout 2013, the ability to hedge out CERs for the Dec 13 contract would depend entirely on them coming from countries that were successful in ratifying the agreement by contract expiry. At the very least, it could certainly kill spot trading of CERs for a large amount of 2013 but will start to have a serious implication for the willingness of anyone to sell CERs into the Dec 13 contract (which currently has open interest of 24.5 Mt) – with the implication that the EUA-CER spread could largely be eroded if full ratification is required.

We note that the EC was seeking legal advice on these issues and that there is no clear statement on either of the two issues we have discussed here.

Further quality restrictions?

Consultant report raises issues around large hydro CERs...

The potential for further quality restrictions on EU eligibility raised its head with the publication of the final consultants report commissioned by the EC on the integrity of the CDM. In terms of further quality restrictions, the report focused on the case of large hydro CERs (>20MW) and examined two potential objections to such credits:

- CERs are not additional, reflecting that non-CDM large hydro dams are often built in host countries like China, which would have similar barriers to those that are CDM projects; and
- large hydro dam projects are unsustainable, having little positive impact on social conditions in local communities and potentially having adverse effects on both communities and ecosystems.

...although makes no clear recommendation

The paper takes a fairly balanced view in the discussion of these two potential objections, reflecting both the view of the proponents of the objections and the views of investors in such projects. The paper does discuss in detail the use of different forms of quality restrictions, but falls short of recommending an out-right ban on these projects. Rather, it calls for further study on some of the issues, recognising that there is a trade-off between more administratively simple restrictions, such as an out-right ban or a ban of such projects in specific host countries (China and India highlighted), against the broader point that each project has specific issues and there will be good local projects that should still be supported.

A significant large hydro pipeline

Figure 40 looks at the current level of hydro projects in the CDM pipeline (not risk adjusted), to give an indication of the magnitude of impact such an outright ban would have on the market. The figure suggests that such a ban on all hydro projects could reducing the supply of EU eligible CERs by more than 1 Gt, once the numbers are risk adjusted.

Figure 40: Hydro CDM projects (Mt)

2013-2020 issuance	Registered	At validation	Total
Existing Dam	53	63	116
New Dam	402	210	612
Run of River	481	752	1233
Total	936	1025	1,962
Large hydro (>20 MW)	774	915	1,690
Small hydro (<20 MW)	167	110	275

Source: UNEP Risoe, Barclays Capital

EC appears to have limited appetite for more restrictions

The question remaining here is what will be the response of the EC to the consultants report? The report itself tends to refer to other studies and points to the need for further work in understanding the various factors at play influencing the integrity of CERs from large hydro projects. It is not a smoking gun, but neither is it a clean bill of health. Both sides of the debate would be able to take something from the debate and so it all comes down to how much pressure builds up against those CERs. It appears to us that the EC itself has limited appetite for advancing another set of proposed quality restrictions so soon after having the last set agreed. However, with the current political climate in DG Clima seeming to be looking for measures to prop up prices, further restrictions on offset use cannot be ruled out.

Any restriction not immediate but could affect Dec 13 contracts

It will take time to introduce a restriction, with the EC needing some more convincing arguments to advance the case, and then releasing a position paper followed by a legislative proposal, followed by the time it takes to become law (months), and then having a minimum six month notice period to the industry. Given all of this, such a restriction would unlikely be able to come into affect much before the end of 2013. However, even then, it could have some implications for both the Dec 13 settlement date and the first compliance deadline under phase 3 (in April 2014). At the moment, this remains a watching brief with their being a real risk around this issue.

Prices and outlook

CER prices have weakened, EUA-CER spread has stayed above 3 €/t

Just as 2011 was harsh for EUAs, it was harsh on CERs, which lost 63% of its value in y/y terms. With EUAs trading around the 7 €/t level, CERs have taken up residence below the 4 €/t level. 2011 has taught us a number of lessons, including:

- the requirement by China's NDRC to pay projects registered in China a minimum price, does not provide a free floor to prices;
- reinforced the message that the marginal cost of producing most CERs is low. Much of the projects are capital intensive, low variable cost type projects (energy efficiency, renewable energy). Even industrial gas CERs have low variable costs, with HFC-23 being done around the 1 €/t level. As such, CERs could fall further before the economics of those projects already being issued CERs would lead to them being shut-in. While low CERs does frustrate further projects going to fruition (as it becomes harder to recoup the capital costs), most projects with the capital already committed are likely to keep on producing CERs;
- the impact of the quality restrictions on supply will be considerable. One potential response of project developers to the current low prices would be to push validation further into the future, to delay the supply of issued CERs in the current period in favour of a later period. While there are obvious cash-flow constraints on how much of this can be actually done, the looming quality restrictions on industrial gases, and the threat of future restrictions being passed on others, pushes developers to get CERs issued quickly and into the market. With 2011 seeing some 170 Mt of these types of credits issued, similar levels are likely to be issued in 2012, a year that is starting with a very healthy level of requests for issuance (34.5 Mt). Also, issues around post-2012 eligibility will be important in limiting the appetite for project developers to push too much issuance forward to 2013; and
- seen the EUA-CER spread stay healthy, around the 3 €/t level (Dec 12). As is our mantra on this topic, using a CER for compliance now means giving up option value, and the more of the option you use up, the higher the price you will likely to want to give up what is remaining. Does suggest that the spread will need to continue to widen as the industrial gas CERs become more distressed as we go through 2012. With the outlook for EUA prices being very modest, this does suggest very limited upside for CERs in the coming year.

Along with the fall in CER prices we saw:

- CER time spreads widening with the Dec 12 - Dec 13 contracts increasing from pricing in around a 0.40 €/t contango at the beginning of December to around 0.80 €/t at the start of 2012. This increase in contango points to some heavy selling of Dec 12 CERs, with industrial gas CERs looking the most likely candidate to be so heavily sold into that contract.

- The Dec 12 – Mar 13 spread still trading in backwardation, with the discount continuing to trade in the 0.25-0.3 €/t level, reflecting the same dynamics of quality constrained industrial gas CERs being sold in volume that is responsible for the erosion of contango between Dec 11 and 12.

CER price forecasts written down

This month we are writing down our CER outlook across the curve, in line with the reduction in EUA prices. Our CER price forecasts are down for:

- 2012 from 8.25 €/t to 4.5 €/t, a reduction of 45%, the forecast EUA-CER spread is down from 4.25 €/t to 3.5 €/t;
- 2013 from 9 €/t to 6 €/t, a reduction of 33%. The EUA-CER spread forecast is down from 6 €/t to 4 €/t; and
- Phase 3 from 13 €/t to 10 €/t, a reduction of 23%.

CER traded volumes

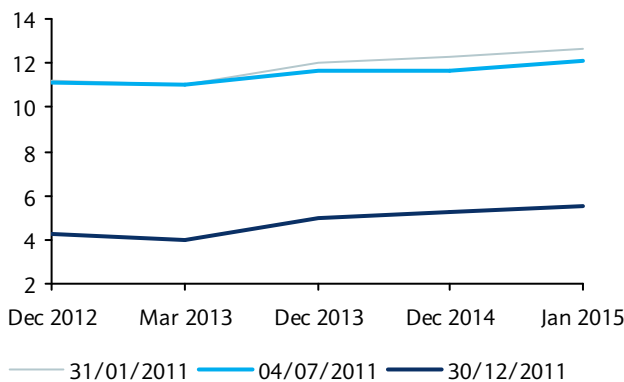
Traded volumes up 37% y/y in 2011

Over the first ten months of 2011, traded volumes in CERs were up 37% y/y, with over 1444 Mt of CERs traded on exchange across the different contracts. Despite this increase in traded volumes, increases in traded volumes fell far short of the increase of issuance seen in 2011 which was up 230%. As with EUA volumes, the increase in traded volumes was more pronounced in the second half of the year.

Open interest picking up post-2012

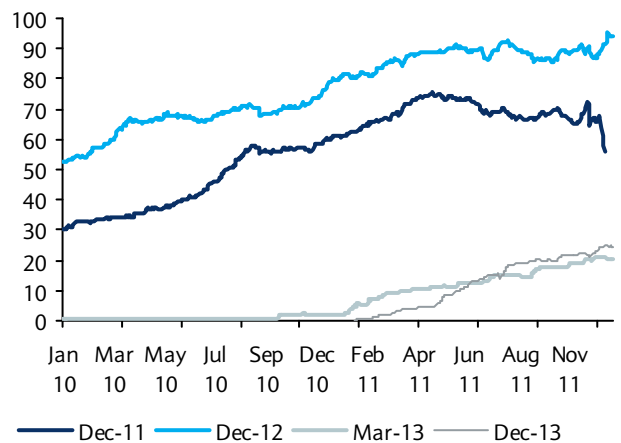
Open interest has increased this year with total open interest across all of the contracts up by 12 Mt y/y, with open interest shifting into the post 2012 contracts (Figure 42). The 2011 contract expired with some 22 Mt more than the 2010 contract expiry, which at the least suggests a higher volume of CER submission in 2011 over 2010. In total, open interest was sitting just over 155 Mt on the ECX, with 60 Mt open in post-2012 contracts, up from the 6 Mt seen at the beginning of 2011.

Figure 41: CER curves (€/t)



Source: ECX, Barclays Capital

Figure 42: CER open interest (Mt)



Source: ECX, Barclays Capital

CDM volume forecasts

Pre-2013

Issuance forecasts at 1135 Mt by end of 2012

We have maintained our expected emission reduction numbers for the period up to 2012 at 1250 Mt but reduced our pre-2013 CER issuance forecasts to 1135 (down 15 Mt from previous forecasts on the expected impact of lower prices).

Figure 43: Kyoto period – CERs available for compliance (2008-12)

	Project numbers	2008-12 (Mt CO ₂)
Issued to 1 January 2012	1354	816
Requesting issuance	115	34.5
Full Kyoto period supply outlook		
CDM pipeline	7,532	2,723
Submitted for validation	3,685	567
- Registered	3,743	2144
- Request for registration/ under review/corrections	104	12
- Rejected/withdrawn	1513	
Risk adjusted supply estimate		1,250
Issuance (to Dec 2012)		1,130

Source: UNFCCC, UNEP Risoe, Barclays Capital

Post 2012 supply

Forecasts total supply sees
little change

In Figure 44, we present our risk-adjusted market balance for CERs, given the current CDM pipeline. The market balance for offsets continues to look in vast over-supply given the current market developments.

Figure 44: Long-term CER supply and demand forecasts

million CERs	2012		2013 to 2020		2020 total	
	Pipeline	Risk Adj	Pipeline	Risk Adj	Pipeline	Risk Adj
Supply						
Registered projects	2144	1,180	4,204	2,522	6,349	3,702
HFC-23	477	500	606	636	1,082	1,136
N20	248	273	392	432	641	705
At Validation	580	70	3,735	1120	4,314	1,190
HFC-23	-	-	-	-	-	-
N20	3	0.3	40	20	44	21
ERU supply		350				350
TOTAL SUPPLY	2,724	1,600	7,939	3,642	10,662	5,242
Eligible Supply EU ETS	2,724	1,600	6,900	2,554	9,622	4,154
Demand	2012	2013 – 2020		2020 total		
EU Sovereign		200		500		700
EU ETS		800		900		1,700
Japan		210		?		210
US		-		?		?
Australia		-		470		470
Others*		40		50		110
Total		1,250		1,920		3,190

Notes: Others covers New Zealand. Post-2012 HFC-23 does not yet include a revision of the “w” factor. EU Sovereign buying assumed under burden-sharing arrangements. Source: UNFCCC, UNEP Risoe, Barclays Capital

Joint implementation: Kyoto period (2008-12)

Determined projects can deliver 296 Mt

In 2011, JI determinations (registrations) were at similar levels to 2010 with 105 projects determined under the mechanism – 95 under track 1 and 10 under track 2. What was different in 2011 was the size of emissions reductions promised with projected emissions reductions across those projects of over 120 Mt – compared with the 74 Mt promised by projects registered in 2010. The dominant hosts remain the Ukraine (65), with Russia, Bulgaria, Germany and the Czech Republic all hosting more than 20.

The other key development in 2011 was the level of issuance in the JI did increase significantly, starting the year around the 30 Mt level and ending the year at the 116 Mt level – an increase of some 86 Mt. The high levels of issuance stimulated greater activity in the secondary trading of ERUs, with the CER-ERU spread being one of the new trades that saw interest over 2011. The CER-ERU (Dec 11) spread traded as high as 0.3 €/t and expired back down at 0.06 €/t – suggesting that all of the potential arbitrage opportunities were more or less exhausted.

Figure 45: Summary of registered JI projects

	Projects	Reductions (2008-12) Mt CO ₂ e
Track 1	305	252
Track 2	37	44
Total	342	296
Issued ERUs		116
Technology summary		
Renewables		25
Energy efficiency/landfill gas/other		120
Fugitive emissions/Coal mine methane		70
N ₂ O/Industrial process		80

Source: UNEP Risoe, UNFCCC, Barclays Capital

Jl pre-2013 forecast issuance at 350 Mt

We retain our forecast for JI issuance of 350 Mt for the period 2008-2012. Determined projects to date can deliver over 296 Mt of that forecast number and the forecast number does expect the continued ramp-up of Russian participation in the JI as we go through 2012.

Global carbon market

Kyoto period (2008-12)

AAU sales: Activity lacking

AAU deals lacking in 2011

2011 ended with all quiet in the AAU space as no new AAU deals were announced. Over 2011, AAU trade was fairly quiet over the year with nine reported deals being done, covering some 67 Mt, with the biggest seller being Lithuania. 2012 sees the Slovakian government active on the selling front, aiming to sell most of its surplus of 27 Mt, but again this should be a reasonably quiet year for activity. The collapse in CER prices has driven AAU prices down and it will be hard for sovereigns to secure much more than 2 €/t for such sales.

Figure 46: AAU sales overview

Sellers	EU member states	Ukraine	Russia	Total
Confirmed sales	221	33	0	255
Estimated potential sales capacity	1,700	2,500	5,500	9,700

Source: Barclays Capital

The global market balance – 2008-12

Our global supply and demand estimates for the Kyoto Protocol first compliance period have not materially changed since last month.

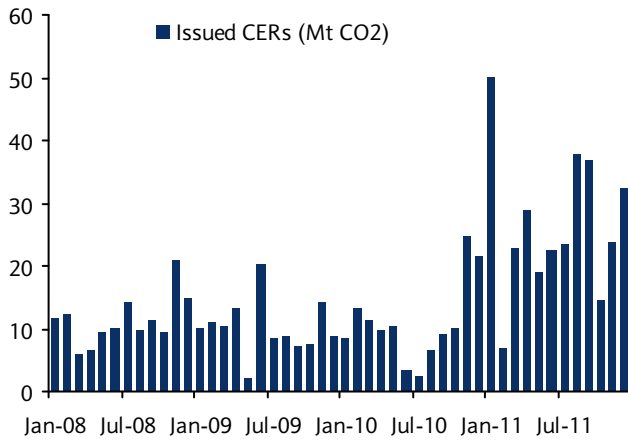
Figure 47: Kyoto Period – CER/ERU demand requirements and balance (2008-12)

2008-12 (Mt CO ₂)	Kyoto short positions	CER/ERU purchase – Sovereign	CER/ERU purchase – Private sector	Actual AAU purchase	Potential unaccounted for gap**
EU	395	200	950	45	75
Japan	400	25	185	134.7	55
Australia	600	-	-	-	600
Others*	90	45	15	-	30
Total	1455	270	1150	179.7	760
Canada	700	-	-	-	700
Total CER+ERU supply			1,220+350=1,570		

Note: *Include Norway, New Zealand, Iceland and Switzerland; **unaccounted for gap includes government and private sector demand – mostly AAUs.
Source: UNFCCC, World Bank, Barclays Capital

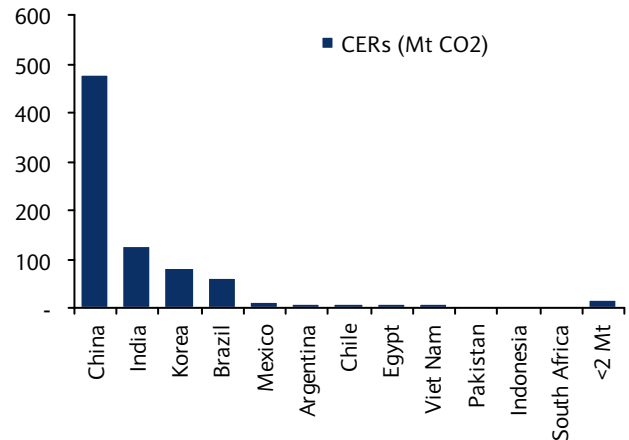
CDM/JI CHARTS

Figure 48: CERs monthly issuance (Mt)



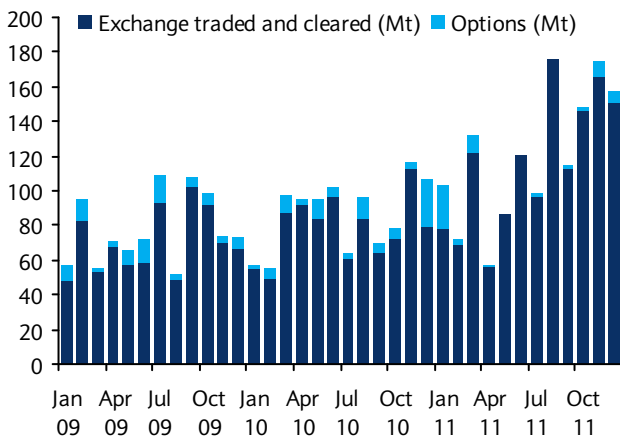
Source: UNFCCC, Barclays Capital

Figure 49: Issued CERs by host (Mt CO₂)



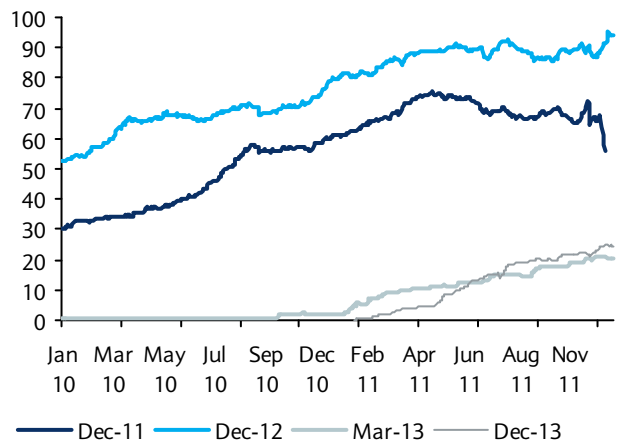
Source: UNFCCC, Barclays Capital

Figure 50: CER traded volumes



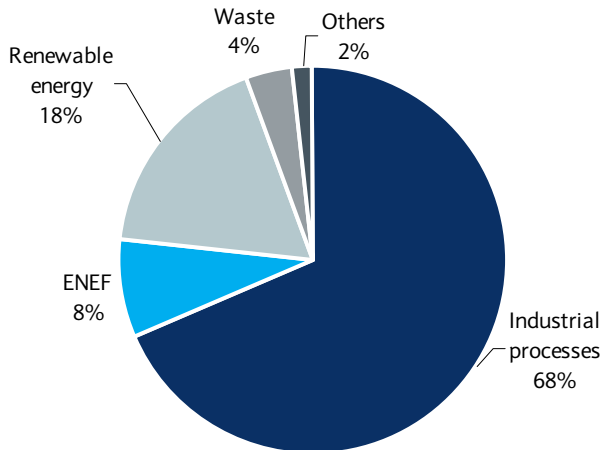
Source: ECX, Bluenext, GreenExchange EEX. Barclays Capital

Figure 51: ECX CER open interest (Mt)



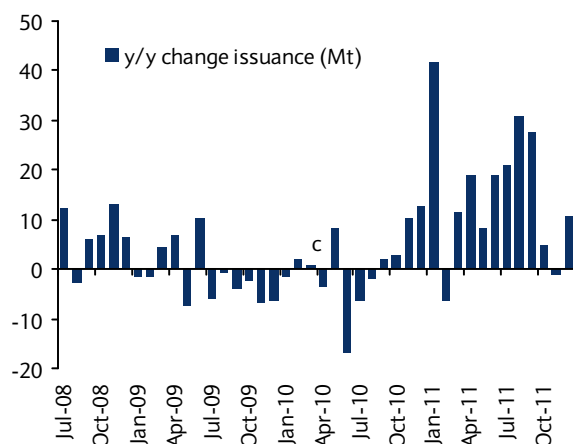
Source: ECX, Barclays Capital

Figure 52: CER issuance by technology



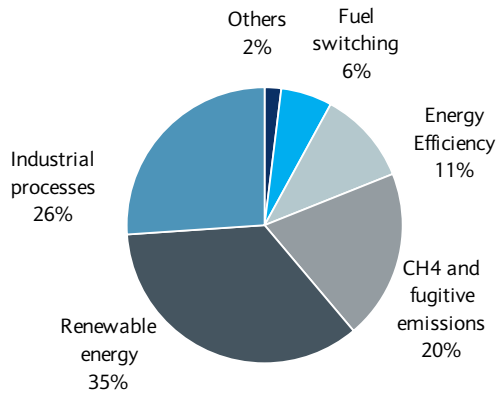
Source: UNFCCC, Barclays Capital

Figure 53: CER issuance – y/y (Mt)



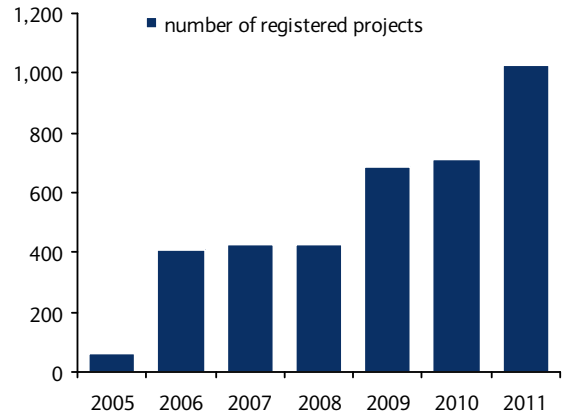
Source: UNFCCC, Barclays Capital

Figure 54: Expected CERs by technology (2008-20)



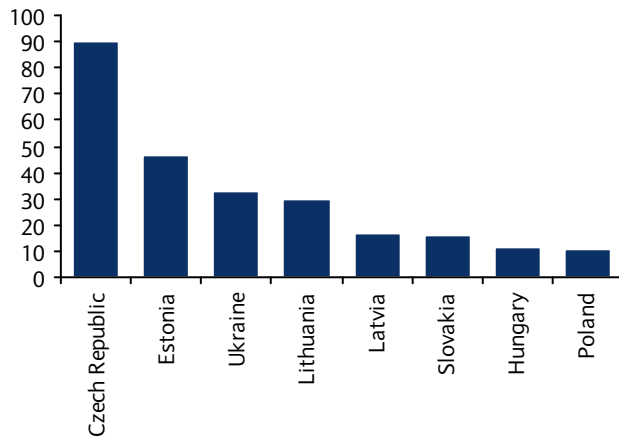
Source: UNFCCC, Barclays Capital

Figure 55: Pattern of registered CER projects (number)



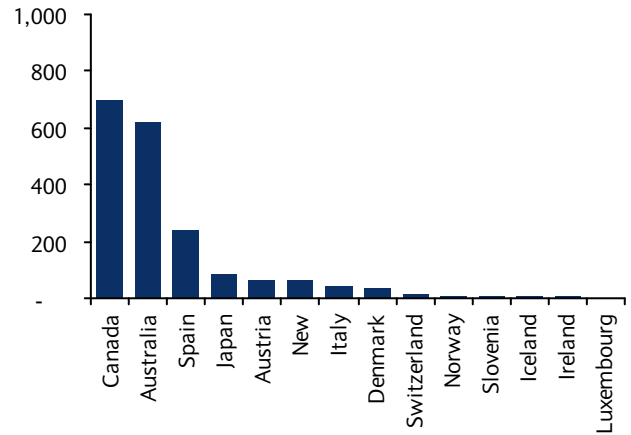
Source: UNFCCC, Barclays Capital

Figure 56: AAU sales by selling country (Mt)



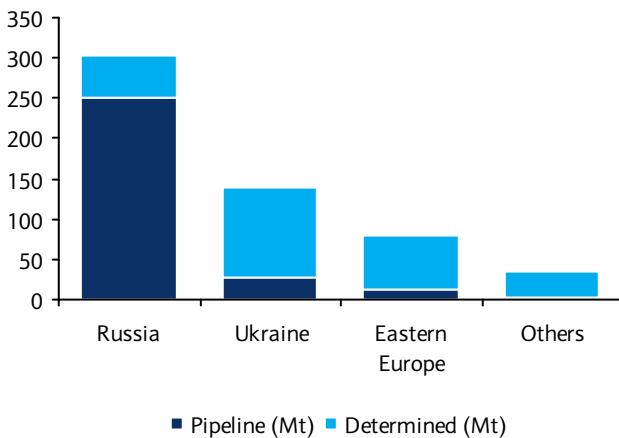
Source: Various, Barclays Capital

Figure 57: Kyoto Protocol emissions less cap (Mt)



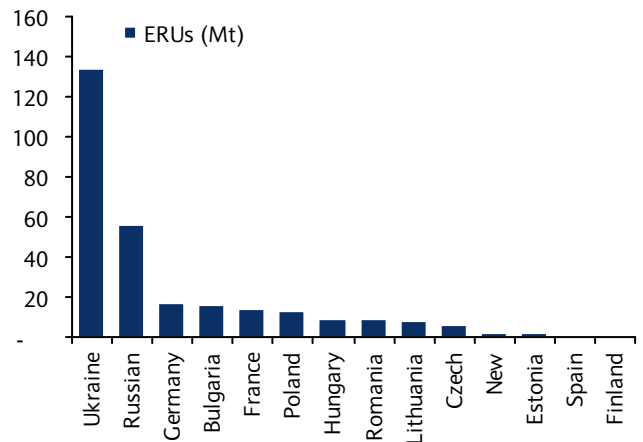
Source: UNFCCC, Barclays Capital

Figure 58: Pipeline JI volumes by host (Mt, 2012 CERs)



Source: UNEP Risoe, Barclays Capital

Figure 59: JI volumes by host for determined projects (Mt, 2012 CERs)



Source: UNFCCC, Barclays Capital

GLOBAL MARKET ROUNDUP

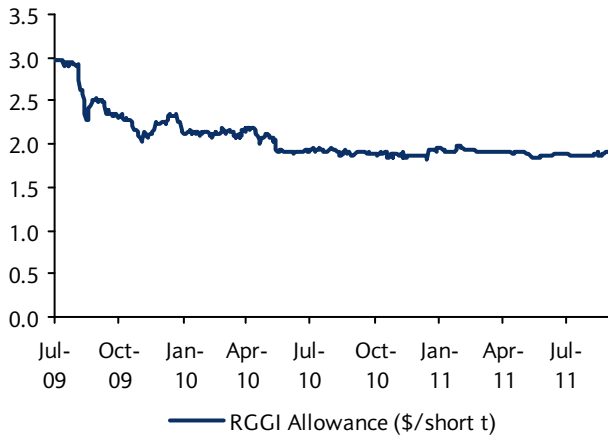
North America

RGGI market: Not much of anything

Prices still at rock bottom

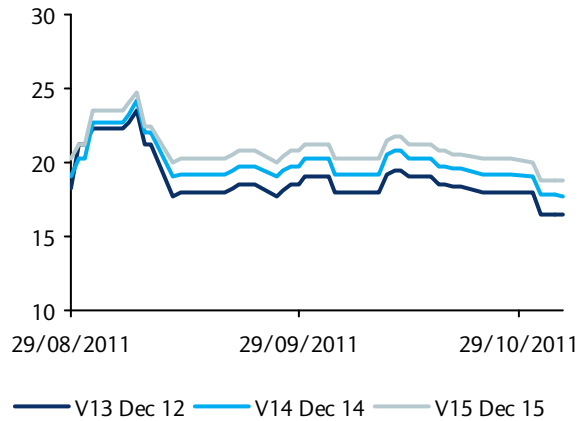
RGGI allowances prices remain stuck in a very tight range, within 0.05 \$/t above the auction reserve price of 1.86 \$/t, with prices at the end of December at 1.86 \$/t. With an overhang of issuance stifling trade and price improvement, the potential for any abrupt changes in price seems limited unless there is a market rebalancing at the end of 2012.

Figure 60: RGGI prices (US\$/ton CO₂)



Source: Reuters (ICE), Barclays Capital

Figure 61: California CCA prices(US\$/ton CO₂)



Source: RGGI, ICE Barclays Capital

Some re-pricing but still at a premium

California: CCAs coming off

The emerging market for CCAs fell consistently through Q4 11, with Vintage 13 Dec 12 prices falling from 19 \$/t on 1 October to end the year at 14.9 \$/t (22% down). Trade remains thin but should pick up in 2012 after the first allocations and auctions occur. We do expect prices to continue to drift down further from these levels although the level of further downside now looks more limited after the recent reductions. At the moment, CCA's are the highest price carbon compliance instruments in the world.

MACROECONOMIC DATA

	Real GDP % over previous period, saar					Real GDP % annual chg			Consumer prices % over a year ago				Consumer prices % annual chg		
	3Q11	4Q11	1Q12	2Q12	3Q12	2011	2012	2013	3Q11	4Q11	1Q12	2Q12	2011	2012	2013
Global	3.4	2.8	3.0	3.3	4.0	3.6	3.2	3.8	4.1	3.8	3.2	2.7	3.8	2.9	3.0
Developed	2.0	0.6	1.1	1.6	2.2	1.3	1.4	1.9	2.9	2.8	2.2	1.6	2.6	1.8	1.9
Emerging	5.0	5.5	5.3	5.4	6.2	6.3	5.5	6.1	6.6	6.0	5.4	5.1	6.3	5.3	5.4
BRIC	6.2	7.7	6.5	6.5	7.2	7.3	6.8	7.2	7.2	5.9	4.8	4.3	6.7	4.5	5.0
America	2.0	2.4	2.7	3.1	3.2	2.5	2.7	2.8	4.6	4.3	3.6 ↓	3.0 ↓	4.2	3.3 ↓	3.9
United States	1.8	2.5	2.5	2.5	3.0	1.7	2.5	2.5	3.8	3.3	2.4 ↓	1.6 ↓	3.2	2.0 ↓	2.8
Canada	3.5	2.5	2.5	2.5	2.0	2.4	2.3	1.7	3.0	3.0	2.7	1.8	3.0	2.1	2.0
Latin America	2.1	2.2	3.4	4.5	4.0	4.4	3.5	3.9	8.4	8.4	8.2	8.4	8.3	8.6	8.7
Argentina	-1.2	2.5	4.5	4.0	0.0	8.3	2.8	3.5	22.6	22.9	24.1	25.4	23.5	26.1	28.4
Brazil	-0.4	1.6	3.4	5.5	5.2	3.0	3.3	4.1	7.1	6.7	5.8	5.1	6.6	5.4	5.6
Chile	2.6	1.2	2.9	4.7	6.8	6.0	3.7	5.0	3.1	3.6	3.0	2.4	3.2	2.8	3.1
Colombia	2.0	10.0	4.5	6.0	1.9	5.5	5.4	4.5	3.5	4.0	3.9	4.5	3.4	4.1	3.6
Mexico	5.5	0.6	2.0	3.2	3.4	3.9	2.8	3.3	3.4	3.3	3.3	3.9	3.4	3.8	3.8
Peru	5.2	5.0	6.1	5.9	6.5	7.0	5.8	6.0	2.8	3.3	3.8	4.0	2.6	3.9	3.2
Venezuela	4.9	1.9	4.7	2.9	4.6	4.2	4.9	2.2	25.8	27.6	28.2	31.4	26.2	32.0	30.7
Asia/Pacific	5.7	5.0	5.5	5.6	6.9	5.7	5.6	6.2	4.0	3.2	2.6	2.3	3.5	2.4	2.7
Japan	5.6	-1.1	0.6	2.3	3.7	-0.9	1.6	2.0	0.2	-0.1	0.0	-0.2	-0.2	-0.2	0.1
Australia	3.9	2.4	1.6	2.4	2.8	1.9	2.6	2.8	3.5	3.5	2.5	2.3	3.5	2.4	2.5
Emerging Asia	5.9	6.6	6.9	6.6	7.9	7.4	6.8	7.4	6.1	5.0	4.1	3.6	5.6	3.8	4.1
China	8.2	8.7	7.0	7.8 ↓	8.7	9.2	8.1	8.4	6.3	4.6	3.6	3.0	5.4	3.2	4.3
Hong Kong	0.3	-1.2	2.0	8.2	8.2	4.8	3.0	3.9	6.4	5.4	4.0	3.3	5.2	3.5	3.5
India	4.8	7.2	9.5	6.1	7.2	7.1	7.1	7.8	9.6	8.9	7.3	7.1	9.4	7.1	6.1
Indonesia	5.6	7.6	4.3	6.3	6.4	6.5	6.2	6.6	4.7	4.2	4.2	4.8	5.4	4.8	5.1
South Korea	3.0	4.5	1.6	3.2	6.1	3.7	3.5	4.5	4.3	3.9	3.1	3.0	4.0	3.0	2.5
Malaysia	3.8	2.0	6.3	6.0	7.0	4.9	5.0	6.5	3.4	3.3	2.9	2.6	3.2	2.6	2.0
Philippines	0.1	8.6	6.0	0.3	2.9	3.8	4.2	4.6	4.5	5.0	3.8	3.3	4.5	3.5	3.7
Singapore	1.9	-2.0	3.6	0.6	14.5	5.2	3.0	5.5	5.5	5.4	4.4	3.8	5.2	3.1	2.0
Taiwan	-0.6	2.0	2.7	4.1	6.6	4.4	3.0	5.5	1.3	1.1	1.7	1.4	1.3	1.8	1.9
Thailand	2.1	-12.0	16.0	8.0	8.0	2.1	4.5	5.5	4.1	4.0 ↓	3.4 ↓	2.3 ↓	3.8	3.1 ↓	2.6
Europe and Africa	2.0	0.6	0.1	0.7	1.2	2.3	0.8	2.0	3.5	3.7	3.2	2.8	3.5	2.8	2.3
Euro area	0.6	-1.4	-0.6	0.0	0.6	1.5	-0.2	1.0	2.7	2.9	2.5	2.1	2.7	2.0	1.6
Belgium	-0.5	-1.7	-0.5	0.3	0.7	1.9	-0.2	1.0	3.6	3.4	3.3	2.6	3.5	2.7	1.7
France	1.2	-0.7	-0.4	-0.1	0.4	1.6	0.0	1.0	2.3	2.6	2.3	1.9	2.3	1.9	1.7
Germany	2.0	-0.9	0.3	0.6	0.8	3.0	0.5	1.4	2.6	2.7	2.2	1.7	2.5	1.7	1.6
Greece	-2.4	-4.0	-3.7	-3.7	-3.7	-6.0	-3.5	-2.0	2.1	2.8	2.3	2.2	3.2	2.3	1.7
Ireland	-7.5 ↓	-2.9	-0.4	2.7	5.0	0.6 ↓	0.2 ↓	2.6	1.1	1.5	1.3	0.8	1.2	0.9	0.3
Italy	-0.6	-2.3	-1.2	-0.2	0.4	0.5	-0.7	0.7	2.7	3.7	3.7 ↑	3.2 ↑	2.9	2.8 ↑	1.9
Netherlands	-1.0	-1.6	-0.9	0.4	1.1	1.4	-0.3	1.2	2.9	2.7	2.5	2.0	2.5	2.1	1.7
Portugal	-2.3	-6.2	-5.6	-2.2	-2.0	-1.5	-3.7	-2.0	3.1	3.8	3.1	2.5	3.6	2.6	1.3
Spain	0.0	-1.5	-1.4	-0.7	0.2	0.7	-0.6	0.9	2.9	2.7	1.9 ↓	1.5	3.0	1.7	1.5
United Kingdom	2.3	-0.1	0.4	1.0	1.7	0.9	0.9	2.3	4.7	4.7	3.5	3.2	4.5	3.0	2.0
Switzerland	0.8	0.0	0.4	0.4	0.8	2.0	0.5	1.1	0.3	0.1	-0.5	-0.2	0.3	0.0	0.5
EM Europe & Africa	4.9	5.3	1.6	2.0	2.6	4.5	3.0	3.9	6.2	6.2	5.7	5.4	6.3	5.6	5.2
Czech Repub.	0.0	-1.4	-0.2	1.1	2.3	1.7	0.5	1.5	1.8	1.9	2.7	3.3	1.9	3.1	2.0
Hungary	1.0	-1.4	-0.8	1.4	0.9	1.3	0.0	1.5	3.3	3.9	4.6	4.7	3.8	4.6	3.0
Poland	2.9	2.0	1.5	1.7	2.5	4.1	2.3	3.2	4.0	4.1	3.6	3.1	4.1	3.2	3.0
Russia	6.9	10.4	2.1	2.3	2.9	4.2	4.3	4.5	8.3	7.0	5.0	5.0	8.6	5.4	6.0
Turkey	5.9	1.5	0.4	1.1	1.4	7.9	1.8	4.1	6.4	8.7	9.9	9.0	6.3	9.1	6.9
Israel	3.4	2.8	2.0	2.3	2.2	4.8	2.5	3.3	3.2	2.7	2.7	2.2	3.5	2.2	2.2
South Africa	1.4	1.5	3.1	3.7	3.9	3.0	2.8	3.8	5.4	6.2	6.6	6.6	5.0	6.6	5.7

Note: Arrows appear next to numbers if current forecasts differ from that of the previous week by 0.5pp or more for quarterly annualized GDP, by 0.2pp or more for annual GDP and by 0.2pp or more for Inflation. Weights used for real GDP are based on IMF PPP-based GDP (2006-2010 average). Weights used for consumer prices are based on IMF nominal GDP (2006-10 average). Source: Barclays Capital

GLOSSARY

AAU	Assigned Amount Units are tradeable emissions units equalling 1 tonne CO ₂ e. AAUs are allocated under the Kyoto Protocol each commitment period. Each country is permitted to emit GHGs equivalent to their assigned amount.
Additionality	The extent to which an emissions reduction project is actually reducing emissions compared with the baseline, business-as-usual scenario. Different facets of a project can be assessed, including its financial, technological and environmental additionality.
Annex B Countries	The 39 countries specified in Annex B to the Kyoto Protocol, which include the European Union, OECD and Economies in Transition (EIT) countries, that agreed to binding commitments on their GHG emissions of variable magnitude from 1990 to 2008-12.
Annex I Countries	Countries that, as Parties specified in Annex I to the UN Framework Convention on Climate Change, are committed to adopting national policies and taking measures to mitigate climate change. All Annex I countries, with the exception of Belarus and Turkey, subsequently became Annex B countries under Kyoto Protocol.
Annex II Countries	Countries that, as Parties specified in Annex II to the UN Framework Convention on Climate Change, have an obligation to help developing countries to meet the financial and technological challenges of climate change in addition to their own efforts to mitigate climate change.
Carbon Dioxide (CO ₂)	A chemical formed by one carbon and two oxygen atoms. It is the most common GHG, a normal constituent of the global atmosphere and critical for biological life on Earth. Its increasing concentrations within the atmosphere have given rise to concerns about the long-term sustainability of human-induced carbon dioxide emitting activities, such as combustions of fossil fuels.
Carbon Dioxide Equivalent (CO ₂ e)	A measure for comparing the radiative effect of different GHGs, in terms of the corresponding impact of emitting carbon dioxide. Carbon dioxide equivalents are calculated by multiplying the Global Warming Potential (GWP) of a gas by its emitted weight.
Carbon Intensity	A measure of the amount of carbon, or more usually carbon dioxide equivalent, emitted in the production and transmission of energy per unit of energy consumed.
Carbon Sequestration/ Carbon capture and Storage	The capture and storage of carbon dioxide within a carbon sink. Typically used to describe the absorption of atmospheric carbon dioxide by biomass, but can include the geological capture and storage of carbon dioxide, for example in oil/gas wells.
Carbon Sink	A geochemical or biological reservoir that acts to sequester carbon from another source within the global environment.
CDM	Clean Development Mechanism. The project-based mechanism articulated in Article 12 of the Kyoto Protocol that allows Annex B parties, ie, developed countries with quantitative emission limits, to invest in carbon projects in non-Annex I countries, to assist their sustainable development. The investor receives tradeable carbon credits (Certified Emission Reductions) in return.
CER	A Certified Emission Reduction is a tradeable credit generated by projects accredited by the Clean Development Mechanism (CDM) of the Kyoto Protocol. These are aimed at the developing world to encourage carbon abatement and generate revenue. The compliance period is seven years (with two renewals) or 10 years and the reduction target is averaged over the whole period. One CER equals one tonne of CO ₂ e.
Community Independent Transaction Log (CITL)	The transaction log established under the EU Emissions Trading Scheme, through which all transactions are communicated, recorded, checked and completed or rejected as appropriate.
COP	Conference of the Parties. The organising and decision making body of the United Nations Framework Convention on Climate Change ('UNFCC'), representing more than 170 nations that have ratified the Convention.
Designated Operational Entity ('DOE')	Accredited, independent bodies that validate emission reduction projects submitted to the CDM Executive Board, and verify the carbon credits that should be issued to the project.
ERU	Emission Reduction Units are credits allocated to projects under the Joint Implementation provisions of the Kyoto Protocol and are each worth one tonne CO ₂ e. Joint implementation projects take place within Kyoto capped (Annex B) countries only. When ERUs are issued within a country, an equivalent number of AAUs have to be cancelled to keep the market whole.
ETS	The European Union Emissions Trading Scheme, which commenced on 1 January 2005.
EUA	European Union Allowances. EUAs are allocated under the National Allocation Plan of each country within the European Emission Trading Scheme (EU-ETS). Each represents one tonne of CO ₂ (other GHG are not yet included in the EU-ETS).
GHG	Greenhouse Gas. Any gas that acts to transmit solar radiation but absorbs infrared radiation. The most important GHGs are: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulphur hexafluoride, along with water vapour.
Green AAUs	Surplus AAUs sold by a country where the buyer specifies that the revenue generated must be spent on a GHG reduction scheme. The opposite is 'hot air'.

IPCC	Intergovernmental Panel on Climate Change (IPCC). An organisation formed in 1988 by the World Meteorological Organisation and the UN Environment Programme to assess scientific and technical information relating to climate change, drawing on leading scientists and experts. It has become the de facto advisory body to world governments through its periodic assessments of the state of science of climate change and possible mitigation and adaptation options.
ITL	The International Transaction Log (ITL). For CERs to be transferred to third parties not directly involved in the project.
Jl	Joint Implementation. One of three flexible mechanisms included in the Kyoto Protocol, specified in Article 6. Jl allows Annex B countries with binding emissions targets to invest in projects – and obtain the resulting carbon credits (ERUs) – from other Annex B developed countries with binding emissions targets.
Kyoto Protocol	The agreement negotiated in 1997 at COP3, and subsequently refined. It commits developed countries to binding GHG emissions targets but provides three market-based “flexible mechanisms” to minimise the cost to participants of meeting targets.
Linking Directive	CERs can be transferred from one national registry to another when both have adopted the Linking Directive into national law.
LULUCF	The land-use, land-use change and forestry (LULUCF) sector as included in the Kyoto Protocol to take account of human-induced activities remove GHGs from the atmosphere, also known as carbon “sinks”. Article 3.3 of UNFCCC deals with forestation, reforestation and deforestation. Article 3.4 provides that additional anthropogenic activities in the agricultural soils. LULUCF categories may be added by Annex Parties to offset their emission targets.
NAP	National Allocation Plans. Each Member State in the EU has to establish a national allocation plan for each trading period in the EU-ETS. In this allocation the Member State decides the total number of allowances to be created for the period and the distribution of these allowances to individual emitting plants.
National Authorities and Designated National Authorities	The body delegated by a national government to assess and authorise proposed CDM and Jl projects and to issue ERUs from Jl projects.
Operational Entity	Independent organisations accredited by the CDM Executive Board that validate carbon projects, advise on their eligibility, and verify the appropriate allocation of credits.
PDD: Project Design Document	The key document required of project developers to register a project with the appropriate Kyoto authorising body.
RMU	Removal Units are a carbon offset created under Kyoto and allocated for carbon sink projects.
UNFCCC	United Nations Framework Convention on Climate Change. Most countries have joined the United Nations Framework Convention on Climate Change (UNFCCC) to begin to consider what can be done to reduce global warming and to cope with whatever temperature increases are inevitable. Recently, a number of nations have approved an addition to the treaty: the Kyoto Protocol. The UNFCCC secretariat supports all institutions involved in the climate change process, particularly the COP, the subsidiary bodies and their Bureau.
VER	Carbon offset offered by commercial firms whereby the purchaser pays to have an emissions allowance purchased and retired on their behalf to offset the carbon produced by the purchaser. There is no formal market as such yet it is possible to buy them.

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