



## Carbon Offsets: Fix or Fig-Leaf?

### Report of our speaker meeting on 18th October 2007

A well attended meeting of the Cambridge Energy Forum met on Thursday 18th October to discuss the moral, regulatory, and commercial implications of the fast growing 'Carbon Offsets' market. An excellent array of speakers from local Cambridge firms, the Financial Times, the non-profit Gold Standard, and the Energy Intensive Users Group lobby provided perspectives for the lively amicable forum discussion that followed.

Recent media investigations of the Carbon Offset business have highlighted morally dubious and flagrantly opportunistic profiteering; yet voluntary carbon reduction offset schemes can have a significant and positive effect. The Cambridge Energy Forum has been examining the moral and practical issues.

Philip Sargent of Cambridge Energy Forum led the discussion with a presentation looking at the morality of carbon offsets. Carbon dioxide emissions are not in and of themselves evil, yet the *effects* of anthropogenic Carbon Dioxide equivalent (CO<sub>2</sub>e) greenhouse gas emissions are causing a moral debate due to the impacts associated with accelerated climate change. Impacts on biodiversity, society, culture, and loss of amenity have led to this issue becoming a hot topic for politicians and NGO's alike.

There is a moral debate as to whether or not we should trade those effects through carbon offsets?

Unlike the 'Cap and Trade' mechanism of the Kyoto Protocol, and European Emissions Trading Scheme (EU-ETS) in the voluntary offsets market, there is no 'cap'. An individual engaging in offsets *feels* different to corporates doing so.

There are a number of options that everyone can take, directly reducing emissions by altering your lifestyle or working practices, reducing the impact of your purchasing, and then there are carbon offsets. How much one spends on each is a relative calculation, and spending too much on reduction, without taking into account the relative costs of offsetting could be viewed as an immoral act.

Some critics of offsets claim that it is distasteful, that it is the moral equivalent of trading in misery. Yet if one considers the use of money to attribute relative value to goods and services that impact indirectly on others, one can argue that both offsets and money are morally equivalent, within a market based economy.

Fiona Harvey the Environment Correspondent from the Financial Times, went on to describe her experiences in investigating the offsets market during 2007. Fiona gave an overview of the two regulated markets, the EU-ETS and Kyoto Protocol Clean Development Mechanism (CDM), noting that both involve cap and trade mechanisms that help establish a price of carbon and therefore encourage investment in lower carbon options across the market overtime. Whilst there are issues with the architecture and regulation of each market, causing for example a price collapse in the EU-ETS from €30 to €0.25 due to over-allocation of free permits by member states, the broad indication is that these carbon markets are a good first step in encouraging companies to move toward lower carbon operations. It is the third market, the voluntary carbon trading market that has been subject to most investigation, with dubious indicators of skulduggery by actors in this space remarkably easy to unearth.

The participants in the voluntary carbon market, are largely driven to take through 'feel good' factors, and intangible brand benefits. Because the market is unregulated it is difficult to estimate its size but was thought to be worth several hundred thousand dollars several years ago, several million dollars two years ago, and estimates are that this market will be worth between 4 and 10 Billion dollars by 2010.

Typically when an FT journalist undertakes an investigation into dubious business practices it takes two weeks of determined research to gather enough evidence for an article. Fiona was able to gather enough evidence within a matter of hours.

This first relatively simple fraud involved established that a company that had e-mailed her offering to sell offsets, had not sourced them, and was not sure where they were going to source them from, though was more than happy to sell offsets. A range of small companies have been established to cash in on the consumer desire to be green, some are better than others, yet this market is steeped in curious accounting. It is not just small entrepreneurial companies that are operating at the margins of this market, performing offset scams on unwitting consumers. Coldplay the music band had a much publicised carbon neutral

offset scheme go awry, and right now around 30 companies on the FTSE All-Share index are or have been involved in 'carbon neutral' marketing of products and services based on the voluntary carbon offset market. The worry is that as that as offset scams come to light, the reputation of these companies may be at risk, as well as the reputation of the offset market as a whole, and the faith that people have in the principle of offsets.

Some of the scams unearthed were easy to identify owing to their glaringly obvious scientific errors, trees that died, wind turbine pyramid-selling schemes etc. Others however were much more sophisticated, involving large multinational companies. For example Dupont attempted to sell consumers, voluntary offsets from HFC-23 destruction projects (HFC-23 is a very potent greenhouse gas with a CO<sub>2</sub>e 11,000 times more potent than CO<sub>2</sub> itself), until the Financial Times asked for a statement from the company as to why it was doing that. Bluesource a US based company, attempted to sell voluntary carbon offsets from a sequestration project, that involved pumping CO<sub>2</sub> into oil fields in order to increase the pressure in the field and extract more oil. From a carbon perspective, much more carbon is released from the extracted oil than from the carbon pumped underground in projects such as these, therefore to claim a climate benefit is morally dubious. The company did not disclose that the sequestration project was linked to oil extraction, and declined to give any figures to the Financial Times in relation to the carbon from the extraction.

A third example of a scam in the offsets market, was notable for its support by the UK Government (DEFRA under David Millibands' leadership). DEFRA published a 'code of conduct' for companies selling offsets, and explicitly endorsed four companies, two of whom were selling a type of carbon credit known as a 'Phase 1 EUA'. These were 'carbon credits' generated from the EU-ETS scheme, where because of over allocation of permits by EU governments, were essentially worthless, and had generated no carbon reductions whatsoever. Under a cap and trade system, carbon reductions can only occur if quotas are set below actual emissions, that is the whole point of a cap and trade system, to create a short market where carbon attracts a value. Because of the over-allocation, and lack of auctioning by member states, the market was 'long' and thus the credits useless, and nearly worthless (around £0.15 each), yet the two companies endorsed by the UK Government were happy to sell them for between £6-10 each. Comfort may be taken in noting that the European Commission and Adair Turner were also taken in by these companies.

Even the Kyoto mechanism has its share of problems, the science of carbon sequestration via forestry and land use changes brings up thorny issues for both the Kyoto CDM and voluntary markets. Under the CDM mechanism various Chinese companies are profiting from HFC destruction schemes that a generating more profits from offsets than from their core business. A recent study published in Nature noted that if instead of allowing HFC destruction via the

market based Kyoto CDM mechanism, the World Bank distributed funds for the capital expenditure needed, over \$4 Billion would have been saved. In summary both the regulated (Kyoto CDM & EU-ETS) and voluntary markets have significant problems, though there is less uncertainty in the former than the latter.

Whilst the principle of offsetting as an economic mechanism is solid, more regulation and more sensible regulation from DEFRA will be required to ensure that the offsets market is both environmentally and financially effective. The key to any project is whether it is additional i.e. whether it would have happened any way or not. The good companies operating in this market as both project developers and purchasers understand this, and are working with governments to evolve effective standards and regulations.

One example of standards that build upon regulatory mechanisms to provide increased credibility to carbon offsetting, was provided by our third speaker, Michael Schlup, Director of the Gold Standard. The Gold Standard is a non-profit organisation backed by 49 environmental and social NGO's from both the developed and developing world. The Gold Standard has created and polices a series of screens that ensure Kyoto Protocol CDM projects adhere to the principle of sustainable development, to prevent scams. By adding this extra layer of oversight and accountability on each qualifying project, the project developers benefit from the credibility that comes from Gold Standard qualification allowing them to provide premium credits to the market, and the purchasers benefit from the knowledge that the offsets are real, verified, and also have positive social and environmental impacts.

Article 12.2 of the Kyoto Protocol notes that the objectives of the protocol are to assist developing countries (non-Annex 1 countries) to achieve sustainable development and to assist developed countries (Annex 1) countries to achieve compliance with their respective quantified emission limitation and reduction commitments. These twin objectives can sometimes be in conflict, permitting scams to occur. The Gold Standard helps ensure these objectives are both met; by ensuring that projects:

- Are a clean, non-fossil fuel energy project (“Source Solutions”)
- Pass the UNFCCC additionality test
- Contribute to Sustainable Development
- Find local stakeholder acceptance
- Pass and independent validation / verification
- According to an independent standard free of conflicts of interest

Michael described problems with the offsets market today in relation to accounting of certificates, communication, calculation of footprints themselves, and the scope of those calculations. For example a number of airlines offer offsetting to customers, yet use incorrect methodologies for calculating offsets, a

lack of accountability with regard to registries have increased fears that some projects have been using double-counting to resell offset credits that should have already been retired, and a lack of transparency in communicating the details of offset schemes have created scandals and market distortions.

There are two broad mechanisms for offset project accounting, the first could be called 'up-front' where a purchaser pays for credits before they are generated, therefore taking on project risk. The second is 'on delivery', which have much reduced risk, but are much harder to find, and can be more expensive. Most carbon offsets sold today are the former, but are rarely disclosed as such.

The pitfalls of offsetting can be solved by additional oversight and regulation, thus strengthening the market. Whilst offsetting is one of the tools available to individuals and consumers, it does not diminish the responsibility to avoid and reduce CO<sub>2</sub>e emissions where possible. Thus offsetting is neither a fix or a fig-leaf, but a policy tool like any other, a complement to other policies designed to foster a low carbon economy. There are scams out there, rotten apples in the basket, we need to sort through them to sort the good from the bad.

Our final speaker was Jeremy Nicholson of the Energy Intensive Users Group, a lobby group for industries such as cement and steel manufacturing. Jeremy supported the outbreak of agreement between Fiona and Michael in relation to current state of the carbon offset market, noting that when it comes to at this point in time it is too much fig-leaf, and not enough fix, and welcomed the evolution of standards and regulations for this emergent market. He went on to outline the interplay of the offsets market with the electricity generation market. From an international perspective, bearing in mind the need for secure and competitive energy supply, the key issue for energy intensive users are relative costs of energy around the world, not 'cheap energy' per se.

The reality is that energy intensive manufacturing is required for the foreseeable future, especially as the developing world undergoes economic growth. Renewables are unlikely to provide this power, with the exception of large scale hydro in northern countries (as opposed to equatorial regions). Nuclear power may play a role, but it is likely that fossil fuel will likely fill this energy need for sometime to come. Having a technological market based fix for addressing these issues is going to be vital if we are to address the issue of reducing CO<sub>2</sub>e emissions, whilst maintaining base-load supplies, and for back up of intermittent renewable energy as it becomes a larger part of the overall energy mix.

The Kyoto Protocol, whilst not the most efficient of treaties, is better than nothing at all, and will likely form the basis for future post 2012 treaties. The certification scheme is theoretically tough, helping to prevent the scams previous speakers have mentioned. From a legal perspective given that climate change is a global problem, there is no reason why emissions reduction projects need be local as is

often the case with other forms of pollution. There may be political and social arguments as to who should bear the costs, owing to differences between generations, and the developed and developing world, but from a climate change perspective it shouldn't matter where, globally, emissions are reduced, therefore a flexible economic system is required.

The scope for fraud within the offsetting industry is considerable, an issue that has been touched upon by both the Environment Audit Group at OFGEM and the Environment Committee in the UK Parliament. Credibility is key.

In looking at 'hard engineering' offsets, that are more easily certified, there are issues that need to be solved. With regard to carbon sequestration in depleted fossil fuel reservoirs i.e. physical CO<sub>2</sub> capture and storage in geologically stable structures, there are issues around aiding recovery, but it is possible to perceive a future where a project both produces and sequesters CO<sub>2</sub> in a short space of time.

With regard to Biomass projects such as Forestry and Biofuels, there are issues with each. With Forestry we have yet to develop agreed accounting techniques as it is difficult to account for future carbon sequestration of a tree, over the coming decades and take into account the risks of fatality due to disease, storms, forest fires, infestation. With Biomass not every fuel is the same, some such as tropically derived intensively monocultured palm oil, actually add to the global carbon footprint compared to fossil fuels. The key point with each, is that there exists a range of credibility, so simply stating 'biofuel good' is missing the bigger picture.

Another area of concern is fuel switching. The UK has been fortunate with respect to its Kyoto targets, owing to the 'dash for gas' during the Thatcher administration. In understanding the coal / gas mix, it is salutary to note the resurgence of coal as a fuel precisely because the current Phase 1 iteration of the EU-ETS, involving over allocation of free permits whose 'costs' were then passed on to consumers generating windfall profits, is currently encouraging the use of dirtier coal, is because of its failure to set a price for carbon, the very opposite of its intention. Phase 2 of the EU-ETS scheme, which starts in 2008, should address many of these issues, with current indications of around €23 per tonne. This should empower fuel switching, though does not provide an incentive for long-term investment in low carbon power.

A more interesting question is whether an offsetting mechanism should be used to encourage fuel switching in developing countries, for example aiding Chinese coal plants to become more efficient. The credibility of most schemes depends on whether you feel this should be happening anyway, in other words would such a project be 'additional'?

Shortly OFGEM will be producing a report on 'Green Energy Supplies', a term fraught with difficulty. The word 'green' means different things to different people, therefore marketers like to use it. Terms such as 'low carbon' and 'renewable' are much more specific, easier to define, and less likely to confuse. Just as was noted in looking at the carbon offset market, the opportunity for scams by power producers is large, for example large energy company with a mix of generating technologies (nuclear, coal, gas, wind, etc.), are able to sell one type of energy 'package' as 100% renewable to 'green' consumers (often at a premium though it costs no more to produce owing to subsidies), yet this means the remainder of the power sold has a raised carbon footprint, which is not always communicated to its 'normal' customers. Such accounting practices need to be clamped down upon, ideally through market based certification rather than government regulation, to ensure that each customer understands the carbon footprint of the energy purchased.

The 'Renewables Obligation' (RO) in the UK is becoming an expensive system, costing around £1 Billion per year, would that £1 Billion be better spent elsewhere given the moral position put forward by Philip Sargent? The implied cost of carbon per tonne saved under the RO is around £100, whilst the EU-ETS price suggests €23, so why UK consumers should pay the former rather than the latter, when a more efficient mechanism may be made available. The current government suggestion is to provide differential subsidies according to the maturity of a particular technology, possibly including biofuels.

Jeremy was also keen to point out the need for more intellectual honesty on the effective carbon footprint of renewables, given the requirement for energy storage, or back-up by fossil fuel. There can be occasions when the wind doesn't blow, though this may be mitigated by offshore wind turbines, the UK does not have the benefit of large scale hydro like the Scandinavian countries.

The key conclusion from Jeremy was that there is no single solution or set of solutions, therefore carbon offsets need to be included, including geological sequestration. Global action is required, especially if we want China and India and others to follow the UK example. To simply move our energy intensive industries abroad is to move emissions off our balance sheet onto those of other countries, is not sustainable, the energy intensive industries in the UK want to be part of the solution, and remain in business during that journey. Therefore offsets will retain a role as part of the solution and in keeping costs down, as long as they are credible and honest about the actual carbon footprints. To answer the question fix of fig-leaf, plainly both at the moment, hopefully more of a fix in the long-term.

---

The forum debate that followed touched upon green tariffs, different certification schemes, the dire need for reform of the UK climate change levy to move from a

position of a tax on energy use to a tax on carbon, and the various regulatory mechanisms that could be brought in to aid the evolution of more robust and efficient market. One of the key lessons from the forum was the need to ensure that projects that generate carbon offset credits are real and verifiable, and would not have occurred anyway under a 'business as usual' scenario. This is what carbon offset schemes call 'additionality'. Unless one can be certain that the cash being paid to generate carbon offsets, often on projects in developing countries, is truly helping communities within those countries to avoid fossil-fuel related carbon emissions, there is a danger that the offsets are of no value.

An important insight from the discussion was that it is not a morally valid position to reduce your personal carbon emission if you spend too much money doing so; as that extra money could be put to better use. Many involved also continue to confuse issues of social equity with those of reducing carbon emissions. The Forum has been following up these issues of "additionality" and "subtractability" raised at the meeting.

There is much to criticise about the carbon offsets market; however, the tightening of regulatory oversight, sensible policy positions from government, and the increasing focus by business on its carbon footprint are all aiding the evolution of the carbon offsets market toward playing a significant and effective role in the fight against climate change.