



## *Voluntary Carbon Offsets Market Outlook - 2008*

### Executive Summary

#### 1. 2007 Highlights

**In the spotlight:** 2007 will be remembered as the year when the voluntary carbon market was in the spotlight, subject to wide public interest as well as critique. The issue of offsetting and carbon neutrality became a topic of conversation for the general audience in many western countries and especially in the US and UK. The media played a major role in mainstreaming the topic. Articles on carbon offsetting appeared in publications such as *The Economist*, *Newsweek*, *Business Week*, *The Financial Times*, *The San Francisco Chronicle*, the *Christian Science Monitor*, *The Guardian*, BBC News etc. The *Washington Post* called into question the veracity of offsets purchased by the U.S. House of Representatives. Offsetting was discussed on television shows, during political debates, and at specialized conferences (such as the "Voluntary Carbon Markets" conferences event organised in London in October 2007 and New York in February 2008).

**More public controversy:** Media attention has brought increased public controversy and sometimes confusion to the market. The main criticisms brought forward have been the lack of quality and additionality of projects from which offsets are sought as well as claims that offsetting is "an easy way out" from taking real action and has only a small impact on the fight against climate change.

Often no distinction was made between a Clean Development Mechanism project and a low-quality voluntary offset project. In some cases, the entire emission trading market was criticized without going into details about specific attributes of the various trading markets. The media has started a wide debate among the carbon market players that is not over yet.

**More market activity:** Notwithstanding the controversies, the voluntary carbon market has been characterized by more companies

going carbon neutral, more carbon free products offered on the market, and more offset and service providers entering the market, especially in the United States and the UK. Data on actual traded volumes of offsets for year 2007 are not yet available, but increased market activity has clearly occurred in the past year.

**New standards emerged:** Partly in response to the media's criticisms, independent initiatives to bring higher certainty and credibility to the market were launched in 2007, including a number of new labels, standards, and best practice guides for the voluntary carbon market. For example, the final version of the Voluntary Carbon Standard was released on 19 November 2007. The recent proliferation of standards available for sellers and buyers of carbon offsets has led to a fear among some market participants that there is increasing confusion regarding the differences among, and the merits of, each standard.

**Role of CDM:** The relationship between the CDM and the voluntary carbon credit market has become more complex in the past year. Regulatory changes introduced by the CDM Executive Board (such as the abolishment of retroactive crediting) have impacted the supply of voluntary offsets. A proposal by the UK Government- yet awaiting final approval- to allow only CERs, EUAs and ERUs (Emission Reduction Units from Joint Implementation projects) to be used for offsetting by UK companies has increased attention on the voluntary carbon market for CDM projects.

**Diversification of prices:** The birth and growth of several standards has contributed to an even higher stratification and diversification of prices for carbon offsets. Significant price differentials have been identified among carbon offsets certified under different schemes, different vintages of carbon offsets, various underlying technologies, and project locations. Overall, carbon offset prices range between 1 and 50 € per ton of CO<sub>2</sub>e, which is much higher than the ranges observed for carbon instruments in the regulated markets.

**Registries launched:** Several registries were launched in 2007 specifically to track carbon offsets used in voluntary programs. Examples of registries are "The Environmental Resources Trust GHG Registry Program", the "Asia Carbon Registry", the "Blue Registry", and the new section of the California Climate Action Registry intended to track GHG offsets. Registries are extremely important for ensuring the credibility of the market because

they aim to avoid double selling of the same carbon offsets and ensure that effective retirement of offsets occurs once they are used for offsetting purposes.

**“Is carbon neutrality enough?”** In 2007 some companies raised the issue of whether achieving carbon neutrality is sufficient. Rather than simply neutralizing their carbon footprint by matching annual emissions with equal volumes of internal emission reduction actions and offsets, some companies like Fiji Water began to buy offsets in excess of their emissions. Thus, the net effect is a company going “carbon negative” or “climate positive,” i.e., compensating through offsetting for more than the company’s footprint.

**Qualitative and quantitative studies published:** The growth and media visibility of the voluntary carbon market did not pass unnoticed. Several consulting companies and not for profit organizations published studies, reports and evaluations of the market. Some reports evaluated the offset providers according to several criteria, such as the guide published by Clean Air Cool Planet (2006) and Tufts University (2006). Guides to carbon neutrality and carbon offsetting were prepared by the Carbon Trust (2007), and F & C Management Limited (2007). Other organizations provided more quantitative assessments of the voluntary market: Caisse des Depots (2007) evaluated all quantitative studies on the topic so far and checked offset providers sites to compile information on offset prices. Hamilton et al (2007) provided findings on both carbon offset volumes and prices from a survey of over 40 offset providers worldwide. This update of the ICF Voluntary Carbon Offset Market study includes the findings of previous studies and complements them with our proprietary analysis and lessons learned from consulting experiences for carbon offset buyers and sellers.

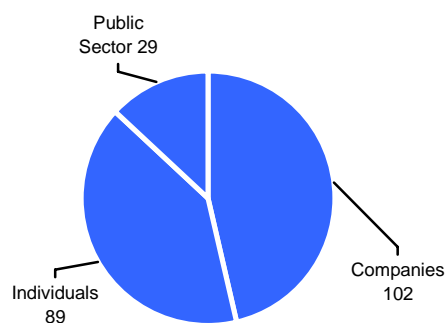
## 2. 2012 Demand Potential

Our estimates for global offset demand in 2012 range between 130 and 380 MtCO<sub>2e</sub>, with a mid-case of roughly **220 MtCO<sub>2e</sub>**. The underlying Medium Growth Scenario is the most likely one with a probability of 45%, whereas the Low Growth Scenario (30%) is slightly more likely than the High Growth Scenario (25%).

The Medium Growth Scenario is characterised by steady incremental gains in awareness among individuals and companies. Entities in

several industrialized countries would be interested in offsetting (e.g. richest countries in Asia, New Zealand, Australia, more entities in EU, U.S., Canada). Carbon neutrality is expected to become mainstream in the US and EU banking, insurance, media, and retail sectors. In this scenario, aviation is included in the EU ETS starting in 2011, which has a slight negative effect on demand of offsets to cover air emissions of especially European individuals and companies. The standardization and commoditization of the voluntary market is expected to be higher than today. The Voluntary Carbon Standard and the Gold Standard in particular should provide greater clarity and legitimacy to the industry and form the basis for fungible commoditised voluntary carbon instruments. CDM rules and methodologies will continue to be applied to offset projects and CERs will be sold to the voluntary market given the established use of CDM and the credibility of the “UN label”.

**2012 Offset Demand Potential by Sector (MtCO<sub>2e</sub>)**



Though we did not segment total demand by region because of the wide global reach of many international companies, it is very clear that the majority of demand for offsets will come from North America and Europe. Demand from Asia, although small at present, is likely to rise as well, especially from the most developed Asian economies. Direct offset sales to consumers will remain a major part of the offset business, but companies will likely be the most important driver of demand as more corporations feel pressure and see the benefits of acting on climate change. Though governments will be highly visible offset buyers, they are not nearly as significant as large contributors to future offset demand.

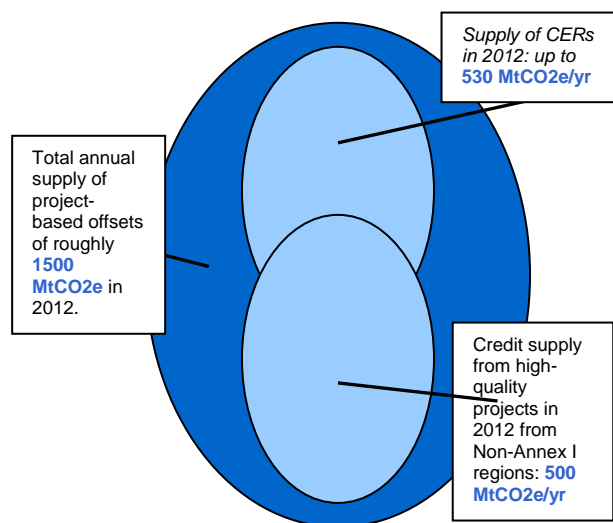
Among company sub-sectors, the most carbon-intensive sub-sectors are not necessarily those that will have the highest

demand for carbon offsets. Many of these sub-sectors, power in particular, already fall under various regulations on GHG emissions. Further, the cost/benefit ratio of a full carbon neutrality program that covers all company emissions is too high for many energy-intensive firms. Nonetheless, some companies may be interested in offsetting emissions above and beyond mandatory compliance to demonstrate voluntary action on climate change. In addition, they may wish to offer selective carbon neutral products and services. These product specific carbon neutrality programs are likely to become a major driver of offset demand. In the less carbon-intensive service sectors, corporate-wide carbon neutrality schemes make more sense and are likely to increase as well. Indeed, many of the most visible examples of corporate carbon offset efforts have come from the financial, media, and telecommunications sectors. For this reason, the largest share of company offset demand will likely come from these less carbon-intensive sectors.

### 3. 2012 Supply Potential

A variety of drivers, including pricing and administrative complexity, will determine how well the mandatory and voluntary markets are able to compete for project opportunities. Provided that mandatory market prices remain higher than those in the voluntary market, we would expect mandatory markets to have first pick of this potential. Our estimates should also be viewed as conservative, as potential in excess of what we show here certainly exists.

**2012 Annual Offset Supply Potential**



We conservatively estimate a total annual potential supply of project-based offsets of roughly **1500 MtCO<sub>2</sub>e** in 2012.

- Total 2012 supply potential of offset credits (both CERs and VERs) from non-Annex I regions: **1,340 MtCO<sub>2</sub>e/yr**
- Total 2012 supply potential of offset credits (VERs) from the U.S.: **150 MtCO<sub>2</sub>e/yr**

Of this total:

- Credit supply potential from high-quality projects in 2012 from non-Annex I regions: **500 MtCO<sub>2</sub>e/yr**
- Supply potential of CERs in 2012: **530 MtCO<sub>2</sub>e/yr**

In conclusion, supply to the voluntary carbon market buyers (who wish to offset their emissions and/or go carbon neutral) is expected to be comprised of mainly high-quality offsets (500 MtCO<sub>2</sub>e/yr). A portion of these offsets will be developed as projects destined for the CDM.

### 4. Outlook

#### Quality of Supply

Our projections for 2012 above show that overall supply is not a limiting factor in the market. Some uncertainties however remain as to whether the quality being supplied can match buyers' requirements. The voluntary market is increasingly focusing on high-quality projects. There are indications that credits coming from high-quality projects might not be available in sufficient quantities although theoretical potential is ample. A small but significant number of poor quality Project Design Documents are being developed and brought to the attention of buyers. These PDDs can easily obfuscate issues such as lack of additionality or environmental impacts occurred but not acknowledged. Some buyers have complained regarding the lack of quality and the lack of ancillary benefits of projects sold to the voluntary carbon market. This situation was denounced in a famous *Financial Times* article of 26 April 2007 "Beware the carbon offsetting cowboys," which opened a strong debate on the credibility of the entire voluntary market. In 2006, the market's main concern was on whether offset providers would have been able to expand their project

pipeline quickly enough to match demand. Now the issue lies mainly in the quality and acceptability of the project pipeline supplied.

Our projections suggest that the voluntary market volumes will quickly rise to a level of comparable magnitude to that of the CDM and JI market. The mandatory compliance market for project-based carbon offsets has expanded quite quickly in response to the Kyoto Protocol and EU ETS, suggesting that similar rapid expansion could be possible in the voluntary market if the investment signal is strong enough. Indeed, the voluntary market has built its niche to some extent around the compliance market. VERs generated from CDM and JI projects that have yet to make it through the full Kyoto approval cycle provide an important symbiotic outlet for project-based emissions reductions. However, a comparison with the mandatory CDM and JI markets is not exact. Critically, the CDM market volume has ramped up quickly on the back of large-scale HFC destruction projects and on the back of strong compliance signals of companies included in the EU Emissions Trading Scheme. These companies needed large volumes of commoditised and inexpensive carbon credits to be surrendered to their governments. The quality and ancillary benefits were not such “hot issues” for compliance buyers as for buyers in the voluntary market. These projects represent quick wins for emissions reductions, but such large-scale opportunities will be quickly exhausted and are not generally desirable or available for voluntary market buyers seeking secondary environmental and social benefits. It will be more challenging for the voluntary market to generate sufficient offsets from a greater number of small-scale and high quality projects.

## Standardization

The past year has seen a proliferation of new standards for projects in the voluntary carbon market or for the carbon offsetting process itself. As defined by Caisse des Dépôts (2007), two types of standards exist:

- **Project labels** which concentrate on the minimal criteria that projects and resulting carbon offsets should have. This group includes the criteria and rules applied to CDM projects, the VCS, the VOS, the VER+ and the CCX standard.
- **Approach labels** which validate the whole offset process including both the supply side (i.e. the quality of the projects that

generate offsets) and the demand side (i.e. the calculation of emissions to be offset). This group includes the DEFRA Code of Best practices or the Climate Cool label awarded by the Climate Neutral Network.

On one hand, private and public initiatives to create new standards and labels are to be welcomed: standards guarantee some level of the needed transparency and quality of the whole voluntary carbon market system. Standards are attempts of the “non-regulated ones to regulate themselves”. This in turn brings increased credibility to the market. However, due to lack of a top down framework that characterises regulated markets, initiatives were undertaken by voluntary market players in a non-coordinated way. Some of these initiatives, such as the Voluntary Carbon Standard and the Defra’s Code of Best Practice were developed using a widespread consultation process, characterized by long lead times. Other initiatives, such as the VER+ standard and the Voluntary Offset Standard were launched by private companies after a limited design period and without a widespread consultation process. Arguably some private initiatives were launched more as a way to market the respective organizations’ activities rather than a way to guarantee transparency, quality and credibility of the market. These organizations justified their initiatives by citing the long time taken to release the final version of the Voluntary Carbon Standard and the urgent need of companies for a working standard for current use.

The question of which standard to apply and which standard is best has occupied the minds of both buyers and sellers in the past year. Similarly, it is yet unclear which standard(s) are likely to be mostly used and applied in the future. In our opinion, to become a successful and widely used standard the following characteristics must be met:

- **Independent nature:** the organizations that launched the standard should be free of conflict of interest. If they are a private organization, it must be clear whether and how the company would benefit financially from launching and applying the standard.
- **Wide applicability:** the standard should be broad enough to cover most voluntary carbon offset projects and most world regions. Standards designed for a specific country are unlikely to become widespread.
- **Endorsement by wider market community:** Standards designed through

a transparent and wide consultation process involving the participation of a number of players and allowing the incorporation of multiple opinions are likely to be more credible

- **Experience and credibility of the launching organization:** The experience in the environmental and emission trading markets as well as the credibility of the organizations launching the standard is also a key factor of success.
- **Meeting specific needs:** Some standards designed to meet specific needs (i.e. guarantee a higher level of sustainability of projects, evaluate whether a project is eligible for a trading platform) are very likely to survive in a niche market.

In our opinion the following standards are likely to become the most widespread in the future:

- **Voluntary Carbon Standard: strengths include** the credibility and the non-profit nature of its launching organizations, the widespread consultation process conducted before the final launch, its current widespread use and the wide applicability of the standard.
- **Gold Standard: strengths include** the credibility of the launching organization and the need expressed by many buyers for high quality projects.
- **CDM:** the CDM rules and methodologies will continue to be applied to offset projects and CERs will be sold to the voluntary market given the established use of CDM and the credibility of the “UN label”.

Other standards such as CCX, green-e, CCBA (Climate Community and Biodiversity Alliance) are likely to be used in specific markets.

## VERs commoditization

The commoditization of verified emissions reductions is strictly connected to the standards that are likely to be mostly used in the voluntary market as well as the extent of utilisation of VER registries. If standards that require commoditization of emissions reductions and the use of a GHG registry become widespread in the market, the carbon units will also become a fully tradable fungible asset class. Registries are essential to guarantee that “a ton of CO<sub>2</sub> is always a ton”, that the same ton is not used for offsetting more than once and that offsets retired are effectively cancelled from circulation.

Registries are essential to establish transparency, enabling the general public to see which offsets are effectively retired. In addition, serial numbers could help to identify each individual offset, further increasing transparency. This already occurs in the CER market: each CER can be tracked down in the CDM registry.

The proliferation of registries that accompanied the proliferation of standards in the past year is double faced. On the one hand, registries are essential to allow commoditization of VERs and transparency; on the other hand multiple registries that do not communicate with each other do not ensure the avoidance of double selling fully. Under the Kyoto Protocol, national GHG registries and the CDM Registry will be fully linked and transactions fully checked by the International Transaction Log (ITL). However, such an ITL does not exist for registries in the voluntary market. Aware of this problem, the organizations that launched the VCS are evaluating ways for allowing an interface between those registries that will be accredited under the VCS.

In our opinion, a liquid secondary market for VERs is likely to develop as soon as the following conditions prevail: 1) a limited number of widely accepted standards prevail in the market 2) the prevailing standards entail some sort of registration and issuance of VERs 3) VERs are fully commoditised and held in proper registries, accepted by market players and properly linked among each other. As it happened in the CERs market, some entities would be willing to on-sell VERs with a guarantee of delivery provided that the conditions above are met.

## Mainstreaming carbon neutrality

“Going carbon neutral” is not limited to pioneering companies in the UK anymore. More and more companies, institutions and individuals decided to offset part or all of their emissions in the past year. “Carbon neutrality” is now claimed by European, American and Australian firms as well as large multinational companies. This trend is likely to continue, as companies follow their peers on the carbon neutrality path. We expect that in two to three years carbon neutrality will become mainstream among Western companies in the financial, media & communications, retail and partly transport sectors. In addition, we expect that more companies will find they need to go beyond “carbon neutrality” to show

commitment on climate. More companies will follow Fiji Water's actions and, rather than simply neutralizing their carbon footprint by matching annual emissions with equal volumes of offsets, will begin to buy offsets in excess of their emissions. In other words, going 'carbon negative' or 'climate positive' might soon become the new state of the art.

Companies are also likely to devise long term carbon neutrality strategies. By recognising that carbon neutrality is not a one-off exercise, but rather a longstanding approach to climate, companies will likely build portfolios from projects continuing to generate offsets into the future. Carbon neutrality strategies will become more sophisticated: companies will likely tend to diversify their portfolios into different types of projects, technologies, regions and standards applied. They will likely hire or appoint personnel specifically in charge of carbon offsetting and due diligence of projects offsets.

Finally, companies in new sectors will probably become interested in carbon neutrality. Becoming the first firm in their respective sector or market segment to go carbon neutral is an extremely powerful marketing message. Such opportunities are especially interesting for retail-oriented companies.

## **US role**

The United States has played an extremely important role in the voluntary carbon market so far. Although many European companies went carbon neutral, Americans have been mostly driving the demand so far. One explanation for this important US role is the absence of a domestic GHG emission reduction target and emissions trading system. While in Europe entire sectors (e.g. power, oil & gas, cement, pulp & paper etc.) are covered by regulatory schemes, in the US, a lack of public policy means that the corporate sector and individuals feel more responsibility to act on a voluntary basis. Also, many entities wishing to offset their emissions in the U.S. have access to numerous US-based offset providers and wholesalers.

Will the U.S. maintain such a dominant position in the voluntary market in the future? Some argue that with the introduction of a nationwide emission reduction target in the U.S. for the post 2012 period, voluntary action will decline. Others state that offsets, both from projects located in the US and internationally, would likely still be allowed by the future US ETS. This would drive demand

for both CDM and voluntary offsets. Finally, climate change awareness among the American population will likely increase even further in the future, driving additional demand from individuals and companies not covered by emission reduction targets. In our opinion, the United States will continue to represent the majority of the voluntary carbon market demand, although their share may decrease compared to the 68% of the market today. This is because vibrant voluntary carbon markets are also developing in the richest countries in Asia (e.g. Singapore, Japan, South Korea) as well as naturally in Europe. The last general election in Australia showed that climate change is very high up in the agenda with the majority of Australian voters: the participation of Australia in the Kyoto Protocol is expected to bring additional demand of CDM and JI credits, more experience in emissions trading by Australian firms, and more participation of the Australian private sector and individuals in offsetting schemes.

## **Post 2012**

An issue of critical importance to the voluntary market will be the likely development of mandatory schemes and especially developments beyond the Kyoto Protocol for the post-2012 period. Significant expansion in the scope of mandatory carbon constraints and related policies and measures can significantly chip away at the base of viable voluntary project, although many companies not subject to compliance requirements will continue to demand voluntary offsets. In particular, both the US and China are beginning to push harder for development of renewable energy as mandated national and state-level policies. Depending on the evolution of these efforts, some previously viable offset projects may lose their additionality over business-as-usual or be priced out of the reach of would-be buyers. As the mandatory market changes, it will be critical for the voluntary market to find and capture credible projects that do not fit well with the scale, requirements, or development processes of the mandatory compliance market.

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